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IF WIRE LINE COULD ONLY *talk*...

Ordinary Wire Line: "Don't you ever get tired?"
Macwhyte PREformed: "Naw. We Macwhytes have terrific resistance to internal friction and fatigue. We live long, too . . . because we're specially lubricated, made from the finest steels, and because we get a chiropractic adjustment just before we leave the factory."

Ordinary Wire Line: "Oh-h-h, my back's about to break! I've been running in circles over sheaves and drums all day long. Oh-h-h . . ."
Macwhyte PREformed: "Buck up fella, you'll get over it. Where you working?"

Ordinary Wire Line: "What d'ya mean, a chiropractic adjustment?"
Macwhyte PREformed: "That means 'made into perfect PREformed Macwhyte Wire Line.' Once th' factory OK's us we're ready for a long life of heavy duty. Believe me, brother, I earn money for the fellow who buys me . . . I'm built to take it!"

Ordinary Wire Line: "On that Rotary Rig. Started this morning, and I'm all worn out. Say, you look like you never worked or worried. How do you do it?"
Macwhyte PREformed: "Me? Say, I work plenty, pal . . . been working on that job next to you for weeks. Night shifts, too. And I feel fine."

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Western Supply Co., Oklahoma City, Oklahoma; Dallas, Greggton, Texas
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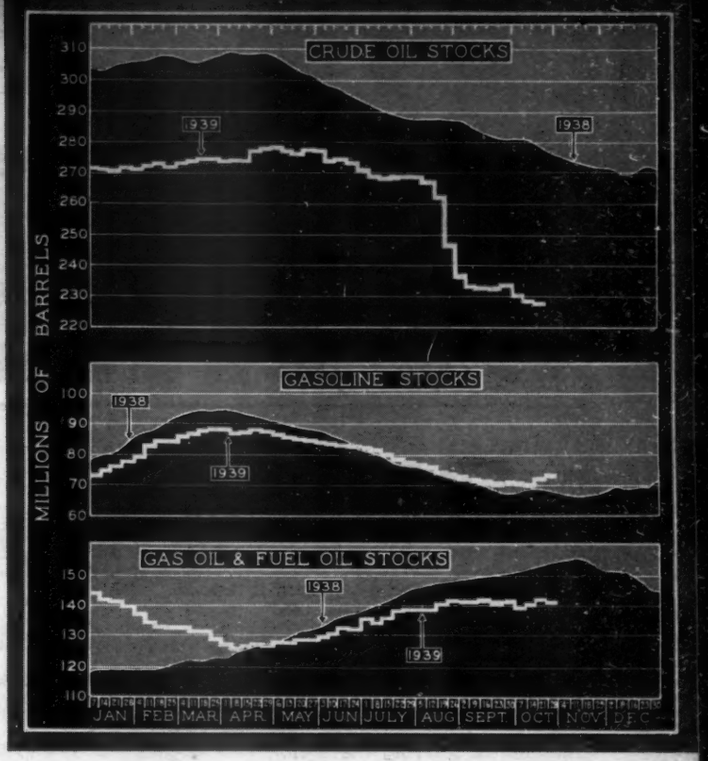
Trends

War Uncertainties Become Factor in Refinery Markets



THE status of shipping to warring countries, neutrality legislation in this country and developments in domestic demand were all factors in the oil situation over the past week. Curtailment of normal shipping from the Gulf Coast and Atlantic seaboard points, apparent since early September, has become a controlling factor in market trends for certain products at coastal points. It is now clear that additional export outlets are needed to maintain the strong market position which developed in August and September.

CRUDE PRODUCTION *3,499,461 bbl. daily average—down 269,164 bbl. One year ago 3,244,282 bbl.*

CRUDE STOCKS *229,127,000 bbl. as of October 21—down 743,000 bbl. One year ago 276,652,000 bbl.*

GASOLINE STOCKS *72,660,000 bbl. as of October 28—up 538,000 bbl. One year ago 69,259,000 bbl.*

GAS AND FUEL OIL STOCKS *140,854,000 bbl. as of October 28—down 642,000 bbl. One year ago 153,355,000 bbl.*

REFINERY RUNS *3,513,000 bbl. daily week ending October 28—down 137,000 bbl. One year ago 3,251,000 bbl.*

Reports are current that the French and British have completed convoy arrangements for the normal movement of tankers from sources of supply in this country, the northern tier of South American countries and Trinidad. The reports lack official confirmation. Many predict that shipping will not return to normal before the end of the year.

Analysts believe that if the neutrality bill as passed by the Senate becomes a law in substantially its present form it will temporarily disrupt oil shipments from this country. This is largely owing to the cash-and-carry provision and the fact that American ships will be barred from war zones. It will necessitate major adjustments in the present movement of tankers both to belligerents and neutrals. Curtailment of American shipping will be reflected in a reduced marine demand for fuel oil.

CRUDE PROD. (BBLS. DAILY)
REF. RUNS (BBLS. DAILY)
CRUDE OIL PRODUCTION 1938
CRUDE OIL PRODUCTION 1939
REFINERY CRUDE RUNS 1938
REFINERY CRUDE RUNS 1939
JAN FEB MAR APR MAY JUNE JULY AUG SEPT

The domestic market situation is more favorable, although war uncertainties are a factor in the outlook after the first of the year. Currently, reports from all parts of the country show that domestic gasoline demand in October was 5 to 6 per cent greater than in October last year, with indications that this comparative condition will continue through November. Industrial and furnace-oil demands at many points east of the Rocky Mountains are absorbing all the supplies available. In the case of industrial fuels many buyers have not decided what their early 1940 requirements will be and are not placing future business in large volume. This situation, it is said, is partly due to the uncertainty as to what effects war orders will have on general business after the first of the year.

DAILY AVERAGE PRODUCTION FOR WEEK

	Oct. 28, 1939	Bur. Mines Oct. est. of demand	Oct. state allowables	Oct. 21, 1939
Oklahoma City	95,425	.....	.....	104,100
Seminole fields	38,525	.....	.....	38,400
Remainder of state	285,550	.....	.....	282,600
Total Oklahoma	419,500	424,200	424,200	425,100
East Texas	395,496	.....	.....	492,448
West Texas	208,586	.....	.....	259,096
North Central Texas	103,607	.....	.....	128,400
Texas Panhandle	64,000	.....	.....	71,397
East Central Texas	83,546	.....	.....	88,698
Gulf Coast Texas	317,442	.....	.....	376,949
Southwest Texas	78,198	.....	.....	97,600
Total Texas	1,250,875	1,444,800	1,392,000	1,514,588
North Louisiana	65,720	.....	.....	66,200
Gulf Coast Louisiana	199,142	.....	.....	196,000
Total Louisiana	264,862	260,300	258,404	262,200
California	606,850	594,800	598,300	637,100
Kansas	187,200	170,600	170,600	174,850
Arkansas	65,875	56,100	65,300	65,370
Eastern fields	102,000	99,400	.....	101,900
Illinois	338,755	275,500	.....	325,266
Michigan	63,964	61,000	.....	62,441
New Mexico	114,890	114,200	114,200	114,910
Rocky Mountain area	84,690	89,400	.....	84,900
Total United States	3,499,461	3,590,300	.....	3,768,625

Refiners for the week ending October 21 according to A.P.I. estimates established an all-time operating record with daily average runs of 3,650,000 bbl. This represents an increase of 270,000 bbl. or 8 per cent over early September runs and 420,000 bbl. daily, or 13 per cent, over the same period last year. Market students agree that these current runs are 150,000 to 200,000 bbl. daily in excess of what they should be in view of inventory conditions and the probable demand for products over the rest of the year.

SPARKS . . . FROM THE NEWS

TREMENDOUS LEAD: Sixty-eight per cent of the world's automobile registrations are in the United States. However, last year's advance was in other countries, which gained 13 per cent in passenger cars and 6 per cent in trucks.

BOOMERANG: Advocates of the Atkinson oil-control bill (California) found that their oil-hog posters so confused the voters that they really proved a boomerang. Nonetheless, supporters are confident of carrying the fight.

RENTALS: They haven't found oil in the Forest City basin yet, but big and little operators are reported paying second-year rentals on leases and retaining more than 50 per cent of acreage originally leased in that Missouri-Kansas-Iowa-Nebraska sector.

?: For the week ending October 21, crude runs to stills in U. S. averaged 3,650,000 bbl. daily—a new record and an increase of 270,000 bbl. daily since early September. In view of stocks and refined market outlook the question is: Why?

BREATH CATCHER: T.N.E.C. hearings ended October 25, giving the oil industry 10 days to catch its breath before the Cole committee investigation starts November 6. A reporter suggested a permanent governmental department on oil investigations.

NEUTRALITY OFFSHOT: It now appears that several weeks will be required for the oil industry to adjust its shipping if the revised neutrality bill passed by the Senate becomes a law.

STAR PERFORMER: Seizing the moment when other refinery products are pausing for a rest, paraffin wax darts out and puts on a brilliant performance.

STADIA CONSUMPTION: We are waiting for a statistician to figure out what the filled football stadia on Saturdays mean in increased gasoline consumption.

LITERATURE: There is no dearth of new books on the petroleum industry. Judging from the output of literature, oil men must be prolific readers, as every mail brings the book-review editor a fresh batch of literary efforts.

ALL-TIME HIGH: More than 11,000 new school buses were built last year—a new record. Puts old-timers who had to trudge several miles to the little red schoolhouse in mind of the newspaper cartoon, "Born 30 years too soon."

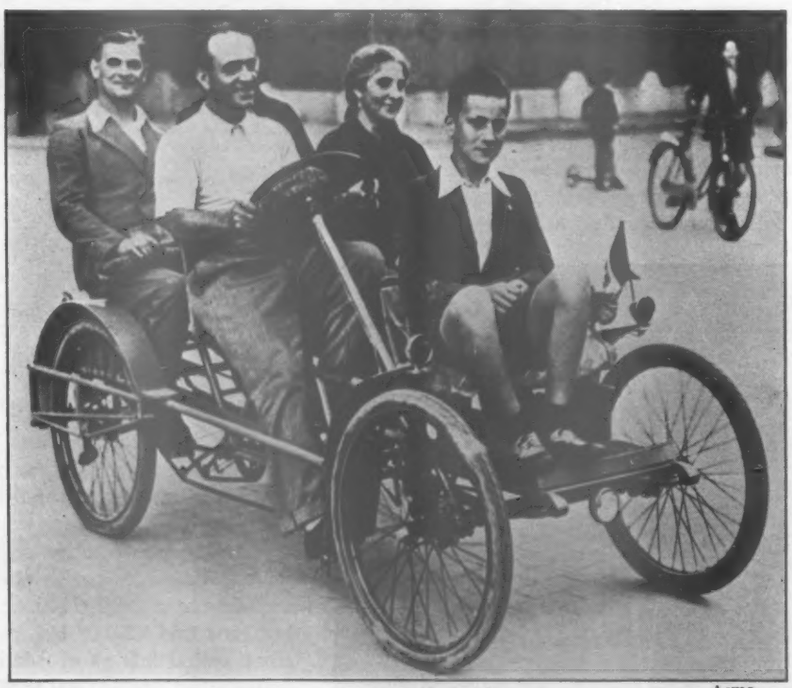
SPREADING: Observers are wondering if the long-predicted "big" field in western Oklahoma isn't being developed at Cement, where a townsite play is gaining momentum and, 8 miles to the northwest, quarter-mile extensions are becoming routine.

PRORATION: The new field rules issued by the Texas Railroad Commission should go far to curb the increasing number of wells. In 6 years production per well has declined from 24 to 15.2 bbl., and wells increased from some 48,000 to more than 89,000.

POTENTIAL: A Bemis, Kansas, well was given a potential rating of 74,000 bbl. daily, based on mechanical measurements and without actual flow test. The question is, how much could it produce?

SOLD OUT: Showing that the mounting prices of lubricating oils result from actual scarcity, an offer by a foreign buyer to pay cash at current quotations for Mid-Continent bright stock had to be passed up by a large refiner this week.

WHEN MUSSOLINI RATIONS GASOLINE . . .



Acme

Here is one Italian mechanic's ingenious answer to gasoline rationing. He takes his family for an outing in a foot-propelled vehicle which might be called a pedomobile. The driver may be assisted in furnishing the motive power by one of the rear passengers

Discoveries Incite Vigorous Exploring on Four Mississippi Fronts

BY GEORGE WEBER

H. M. Morse, oil and gas supervisor of the state Oil and Gas Board, who is in charge of enforcing field rules and directing development in Mississippi

JACKSON, Miss., Oct. 30.—Incited by the discovery and extension of its first oil field, Mississippi seems slated for a long-expected campaign of oil exploration. Independents and major companies have sent hundreds of men into the state to watch developments and engage in the lease play. Based on the growing activity in geophysical shooting and lease blocking, the number of wildcats in the state is expected to show a substantial gain within the next few weeks.

The interest in Mississippi is concentrated on four fronts. In the order of importance they are: The Tinsley field of Yazoo County, which is Mississippi's first oil pool; the Vicksburg-Jackson district, in which leasing is currently the heaviest; Mississippi Sound, where Phillips Petroleum Co. has recently completed a 6-month exploration program and is reporting on its findings, and northeastern Mississippi, included in the northwestern Alabama basin play.

While these four fronts stand out as the most active, the phenomenal spurt of interest has extended to many other counties. Although the Tinsley discovery is cited as the immediate cause of the excitement, Mississippi's activity is based on an interest which dates back for a considerable period.

Over the past several years Mississippi had been the scene of an unusual amount of leasing, considering that no oil had been discovered. Up to the Tinsley discovery, over 1,530,000 acres were under lease, comprising over 100 blocks, few of which had been drilled. This play, extending through 44 counties, was concentrated in the south-central section of the state, in what is termed the Mississippi Basin, an old basin or embayment of the Gulf Coast. The leases, for the most part, were for long terms, and drilling has not followed in proportion to the volume of leasing. Many of the blocks thus assembled are due to expire within the next year or two, which, in light of the current interest, will bring a long-expected drilling campaign in these blocks into being.

The past leasing activity involved nearly 50 independents and 9 major oil companies. Gulf Refining Co. held by far the largest acreage on long-term leases and in order of their holdings, the other major companies were: Sun Oil Co., California Co., Texas Co., Union Producing Co., Humble Oil & Refining Co., Ohio Oil Co., Phillips Petroleum Co. and Barnsdall Oil Co.

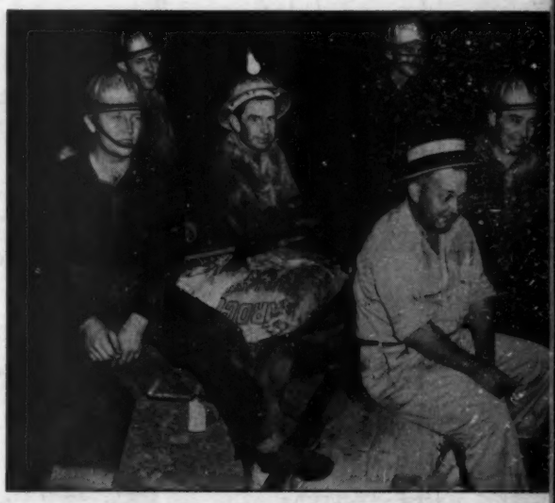
Since the discovery of the Tinsley field, and the subsequent extension and new sand strike, leasing has reached a pitch which makes it impossible to estimate accurately the total acreage now held under lease. A number of new blocks are already assembled and edge leasing of existing blocks is also active. There is already a marked trend toward higher prices for rentals and bonuses, which is tending to retard complete blocking of some prospects.

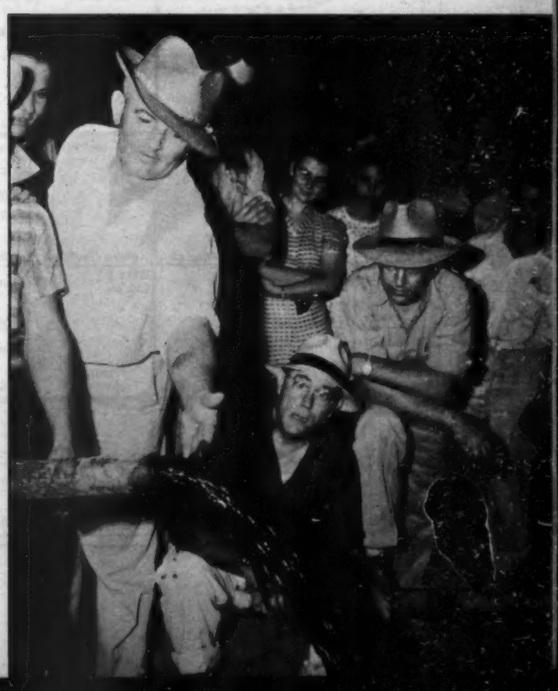
Such widespread activity, touched off by one oil-field discovery in the state, indicates considerable speculation in lease and royalty trading. The entrance of substantial members of the oil industry, however, shows a true interest in the state's possibility, and Mississippi seems due for the greatest exploratory period of its history.

Tinsley Field

Foremost in current attention is the Tinsley field, discovered August 29 and already extended in three directions, with a second oil horizon found underlying the discovery zone. On its discovery, the field drew considerable attention, due to its novel position as the first oil pool in the state. There was some skepticism, however, as to its importance in its own right, since the oil section of the discovery well, Union Producing Co.'s No. 1 Woodruff, was streaked with shale and relatively thin.

The next three tests, drilled in northeast, north and south outpost locations, brought results which greatly quickened interest. Both the south and northeast outposts proved better wells than the discovery. The north outpost, Union Producing Co.'s No. 1 Stevens, missed the Woodruff sand, cooling interest for the time being. But when this well cored a good oil section in the deeper Eutaw formation, and tested 2,900 ft. of pipe-line oil in 11 minutes on a drill-stem test of the sand, the lid was off and the Mississippi play spurted to its present intense pitch. More leasing and royalty trading is reported in the past week in that area than in the previous 8 weeks from the field discovery to the Eutaw-sand discovery.





Right, upper: The crew which completed the Union Producing Co.'s No. 1 Woodruff, discovery well of the Tinsley field. The well is producing 315 bbl. daily through a 12/64-in. choke. Right, lower: This scene was taken at the discovery well of the Tinsley field during the first night that it was turned into the pits. The sight of commercial oil in Mississippi attracted the attention of the oil industry in general

Union's No. 1 Stevens, coring below 5,040 ft., has encountered no other shows, penetrating mostly shale bodies. The chances for finding additional oil are considered good in the deeper Tuscaloosa and Lower Cretaceous formations, which can be reached with the bit in that section.

Leases range in price from between $350 and $500 per acre ¾ mile from the wells, the closest acreage available, to $10 and $20 an acre 5 miles out, with considerable trading in tracts beyond the 5-mile radius. In view of this activity, the field now assumes an importance in its own right.

In the past few days little actual field development of note has taken place. The three wells now producing are flowing a total of about 800 bbl. daily through 12/64-in. chokes. The oil ranges from 32.8° to 34.7° A.P.I. gravity. Six new locations have been staked. Only one, Jones & O'Brien's No. 2 Stevens is an offset to a producer. The remaining five, some of them still tentative, are outposts on the north, east, south and southwest, and the drilling of these tests will reveal much regarding the probable extent of the field.

The Tinsley field is well located for transportation facilities. It is served by rail, and the Yazoo River, now navigable for 10 miles of its length, can be channeled to the field or near enough to furnish barge service to the Mississippi. Union Producing Co. has announced it will begin construction of a pipe-line gathering system for the entire field.

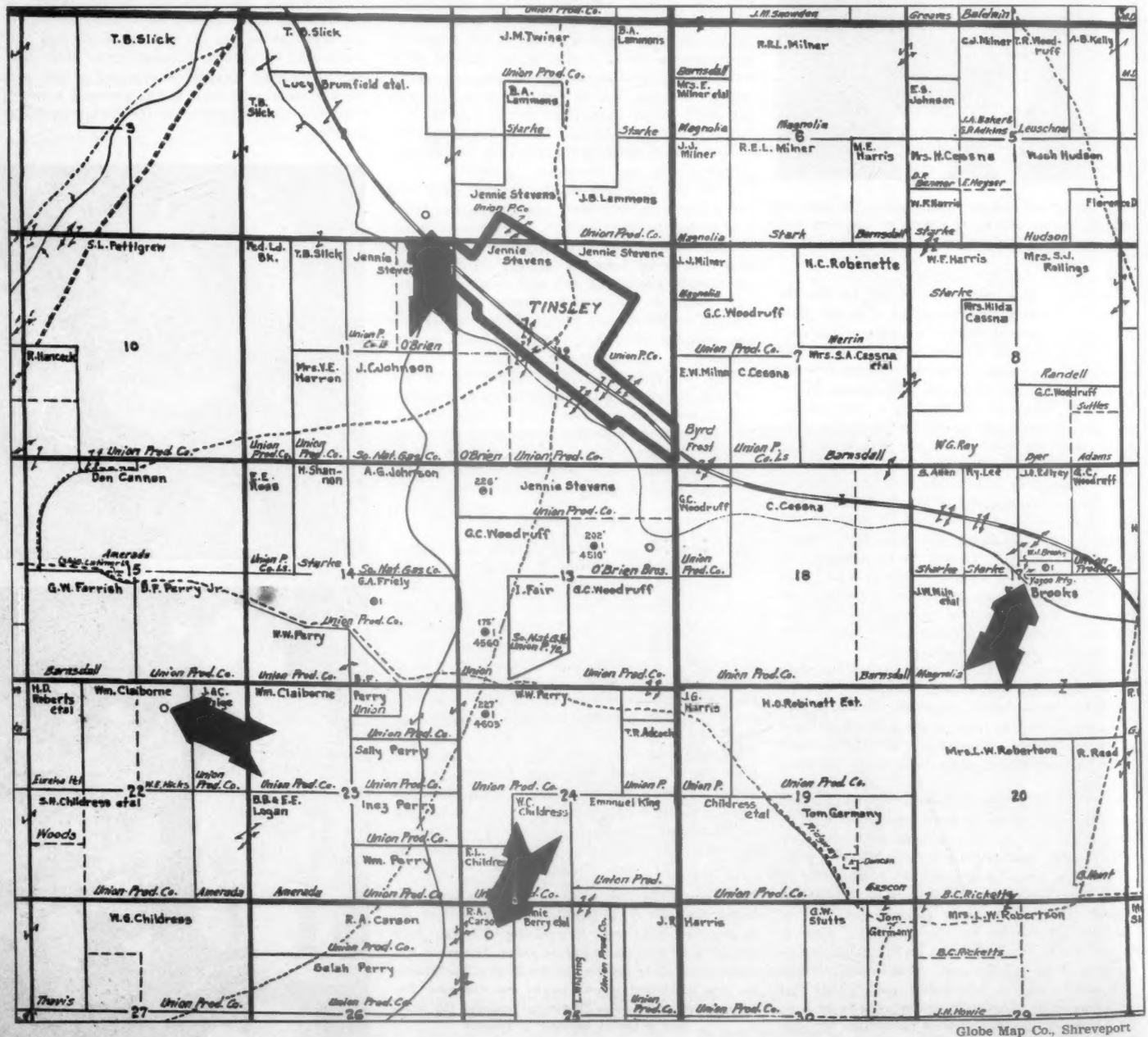
The area is also strategic for a small refinery, with the Jackson and Vicksburg markets near, and the Mississippi transportation facilities advantageous. Two refining companies are interested in the prospect, but no definite plans are expected until production is further developed.

Vicksburg-Jackson Trend

Several prospects in the Vicksburg-Jackson district comprise the second area of interest in the state. The play, a direct outcome of the Tinsley success, is general throughout several counties in West Central Mississippi. Following a report issued by the Mississippi State Geological Survey in August, covering three prospects located near Vicksburg, leasing became active in that area. The Glass dome and Blakely prospect of Warren County and the Sartartia structure near Tinsley in Yazoo County, are now receiving active play. Three oil interests are mainly interested in the Glass dome, and a test is being planned in the near future by W. O. Allen.

At Blakely, five companies, four of them majors, have holdings, although the largest tracts near the top of the structure are not yet leased. Spurred by the Tinsley strike, other prospects in the area are scenes of active leasing. The Bolton, Brownsville and Raymond prospects of Hinds County, and other areas in neighboring Yazoo, Sharkey, Holmes, Madison, Rankin, and Leake counties are included in the play. Union Producing Co. is planning to reenter its No. 1 Anderson near Flora in Madison County. This test had shows of oil at 4,414-95 ft., but was abandoned at 6,265 ft. after testing salt water in the oil-show level.

Activity is also spreading to the northern part of the state, with announcement this week of



Globe Map Co., Shreveport

This lease map of the Tinsley field shows the outpost tests, proposed and drilling. All four outposts are located at least a mile from the three producers in the field. It is estimated that seven rigs will be active in the field within a few days, depending on offset-drilling needs

two new wildcats in Wilkinson and De Soto counties. Grenada County is also included in the interest, as well as Issequena, Attala and Copiah counties.

The Vicksburg-Jackson area shows subsurface formations similar to those in North Louisiana and Arkansas. The Vicksburg lime shows a dip to the east. This is no indication of the deeper formations, however, as illustrated by the Eutaw formation, corresponding to the Blossom sand of North Louisiana. This formation dips sharply to the west, as shown in the few deep tests drilled in the area. There is some disagreement as to the effect of faulting in the area, but the presence of several known faults indicates that it may play an important part in the determination of structures in the district.

Hinds County is the highest, structurally, in the state, with exception of the northeast corner. The fact that most of the wildcatting has taken place in Hinds, Rankin, Warren, and Madison counties gives operators the best subsurface information found anywhere in the state, with a greater chance of finding further oil. This fact also accounts for the concentration of play around these counties.

Mississippi Sound

The third section of the state in current interest is a 780,000-acre state-owned tract in Mississippi Sound, on the Gulf Coast. This tract was leased to Phillips Petroleum Co. 6 months ago for exploration purposes. Under the terms of the agreement with the state Mineral Lease Commission, the company must now report on findings of the first one-quarter of the tract, which has been surveyed. The company will outline any structures found, and will name these areas on which it desires leases, turning back to the state the remaining acreage. The drilling of 10,000-ft. tests must begin on each structure taken within 60 days from date of the lease. The report covering the first of four 6-month exploration periods is anticipated with much interest, for it may begin an important schedule of deep-well drilling in the coastal sector.

Northwest Alabama Basin

Oil operators' attention is directed to a fourth section of Mississippi, the extreme northeast corner, which is included in the northwest Alabama basin. Although the play in that area has been under way for several months, the influx of oil men to the state and the quickening of interest generally have accelerated leasing and royalty trading. Some large deals are reported in the area, involving several hundred thousand acres. The staking of G. C. Grasty's No. 1 Kentucky Lumber Co., first test well in the area since the current play began, has crystallized action in that area. The well is drilling below surface casing set at 170 ft., after skidding over to a new location.

Subsurface Exploration

Over 21 crews are active in exploring Mississippi for indications of structure. Of this total, 10 are working with the gravitometer in Franklin, Holmes, Madison, Pike, Warren, and Yazoo counties. Reflection seismograph is employed by eight crews in Jones and Yazoo counties, besides two active in Mississippi Sound by Phillips Petroleum Co. and two engaged in Northeast Mississippi. Two magnetometer parties and one soil-analysis crew are working in the state. Besides, a magnetometer party and a reflection seismograph crew are operating in Alabama. Included in the exploratory work are Amerada Petroleum Corp., California Co., Carter Oil Co., Cities Service Oil Co., Fohs Oil Co., Gulf Refining Co., Magnolia Petroleum Co., Phillips Petroleum Co., Pure Oil Co., Sinclair Prairie Oil Co., and Tide Water Associated Oil Co.

State Control

The Mississippi Legislature in 1932 passed an act which became Chapter 117 of the laws of 1932. This provided for the establishment of a state oil and gas board, comprising the governor, attorney general, state land commissioner and state oil and gas supervisor. Empowered to adopt and enforce rules and regulations for the development of oil and gas in the state, the board's authority was further strengthened in 1936 by an amendment providing for proration of gas and oil to prevent waste, defined among other meanings, as that production of gas or oil in excess of transportation or market facilities or reasonable market demand.

In applying the law to the field rules for Tinsley, the outstanding point is the 40-acre spacing rule laid down. This pattern, while attacked in some quarters, is generally accepted as reasonable. Thorough drilling and producing rules promoting conservation and safety are incorporated in the field rules for the state's first oil pool.

Proration is not considered imminent at Tinsley, since the basis provided by law hardly applies to such small current production. The 40-acre spacing rule is relied upon largely to prevent dissipation of reservoir energy through overproduction. Gas-oil ratios are low in the three producing wells, as well as tubing and casing pressures.

The legislature meets in its next general session in January 1940. Whether further legislation of the nature considered and rejected in the last session will be adopted is unknown at present. However, the present trend in activity is certain to quicken interest in such legislation, and the issue may be widely debated from both sides of the question of further state control.

More adequate financial provision is needed for the increased duties of the Oil and Gas Board. The present law provides for a salary and office for the supervisor, and a biennial appropriation for reasonable expenses incurred in administration of the board's duties. In light of the present activity, the current appropriation is entirely insufficient, even though it is augmented by permit fees of $25 for each well drilled, the latter provided by an amendment to the law in 1936.

Governor White last week took steps to check the sale of state lands, declaring a moratorium on all sales excepting city lots, until legislative action can be taken to reserve mineral rights on such state lands to the state. This followed a limited moratorium on sale of state lands in 23 counties where leasing has been active. The gain in such activity was reflected by the records of the land commissioner's office which revealed that while the state still owns over 1,000,000 acres, the sales of state land in the past 1½ years had amounted to $800,000, compared with total previous sales of only $900,000 for the 10-year period priod to April 1938.

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Commerce Commission to Resume Rate Hearing

DALLAS, Tex., Oct. 30.—Closing 4 days of direct questioning and the arguments for and against rail-rate reductions on petroleum products from the Mid-Continent area northward, more than 300 refiners, jobbers, and attorneys today reviewed programs of their work. Presenting these data before Commissioner W. M. W. Splawn and Examiner C. E. Stiles of the Interstate Commerce Commission, accurate records of the testimony were taken. These, together with that to be presented before the commission in Chicago on November 15, are expected to complete the testimony to be offered by the complainants.

The complaint involves a question of inequality in transportation costs to the different branches of the industry. Rates or published tariffs, it is contended by complainants, are meaningless unless they represent the actual out-of-pocket cost to the shipper; that those using railroads pay the published tariff; those using pipe lines pay the actual cost plus a reasonable return on the property value and that the out-of-pocket costs to those shipping by pipe line are not related to the published pipe-line tariffs.

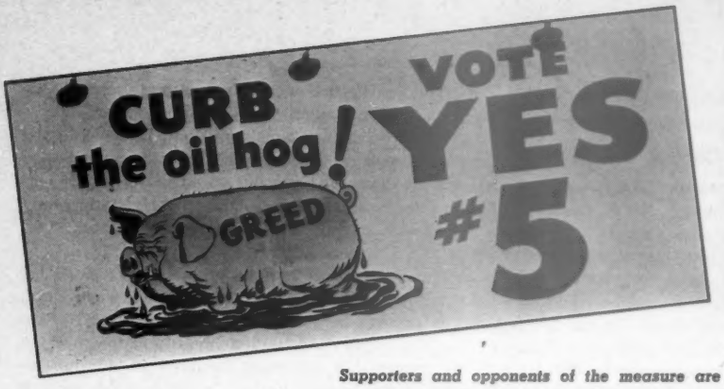
The transportation costs to those shipping by rail to Standard of Indiana territory are said to be from ½ cent to 2½ cents per gallon higher than the transportation costs to those shipping by pipe line and complainants seek an equalization.

No definite proposal as to the method to be employed was suggested and the complainants' attorney stated: "Complainants do not seek pipe-line divorcement nor do they seek anything that would destroy or hamper the use of pipe lines; they do not seek to take away private ownership and operation of the pipe lines but do seek an equalization of transportation costs by all common carriers to all shippers whether they use rail, pipe line, or water. Some refiners believe that pipe-line divorcement is the best method, others believe an amendment to the commodities clause; others believe in different methods, but all agreed that some method should be devised whereby an equalization in transportation costs should be accomplished."

It was contended by some witnesses that the refiners using the pipe line were making concessions and direct cuts in prices out of the transportation profits, operating their refineries and marketing branches at a loss amounting to as much as 1½ cents a gallon and making it up from the transportation advantages which came back to them in the form of dividends from the privately owned transportation companies. It was contended that if the oil now moving through the pipe lines should move by rail to the territory east of the Rocky Mountains at an average rate of 35 cents per hundred weight, the revenues of the railroads would be increased a billion dollars per year; complainants contending that more than 900,000,000 bbl. moved through trunk interstate pipe lines during 1937, excluding gathering lines; and it was further contended that a rate higher than an average of 35 cents per hundred weight would move the traffic. That the oil either in the form of crude or the finished product actually does move from the well to the consumer and should move by rail.

Some of the testimony by complainants indicated they sought the rates in effect from 1916 to 1918 from the Mid-Continent field, claiming the railroads and the independent refining companies were prosperous during that period, and it was only after the rate increases in 1918 and 1920 that the independent Mid-Continent refiner began to feel pinched. Some of the complainants think this possibly, might eventually work out an equalization, yet they insist they are offering this only as one method and whether the rail rates are reduced or the pipe-line costs increased, they seek an equalization in costs of transportation.

It was contended by complainants that the cost in cents per 100 lb. is of little importance so long as every shipper pays the same; that the only difficulty arose through the increase in rail rates, and the reduction in pipe-line costs due to increased volume that caused all the trouble. It was said that the gasoline tax, amounting to more in cents per 100 lb. than the entire rate, did not injure any branch of the industry, since every refiner, big and little, paid exactly the same taxes. The whole difficulty is that one group pays the rail transportation cost while the other does not.



Supporters and opponents of the measure are staging an active billboard campaign, somewhat to the confusion of the voting public. Above are pro and con posters

California Again to Vote on Oil Conservation Bill

By L. P. STOCKMAN

LOS ANGELES, Calif., Oct. 30.—The aggressive campaign being waged by supporters of the Atkinson oil-control bill appears to be clicking, with the possibility that California on November 7 may have its first compulsory regulatory oil and gas law. The issue is so complicated, however, it is impossible to venture a guess one way or the other. First, the advocates of the bill came out with the so-called oil hog as opposed to the hungry shark placed on the billboards by the group working against the measure. These two ugly creatures confused the voters and the oil hog asking a yes vote for the Atkinson oil-control bill proved a boomerang. To eliminate confusion, advocates of the bill plastered United States battleships over all the oil hog signs, and this resulted in resentment on the part of many persons who felt that neither of the armed forces of the United States should be used for advertising matter, but in this case the secretary of navy, secretary of war, and secretary of interior have endorsed the issue.

The "ham and eggs" and the oil-control bills have resulted in a political upheaval in the state capitol and have split the Democratic administration wide open. Governor Olson is actively campaigning for the oil bill while Lieutenant Governor Patterson is campaigning against it. Governor Olson is in the "dog house" with the "ham and eggs" group while Lieutenant Governor Patterson is still in the good graces of this group. This lineup may prove the dominating influence.

The general public does not yet know what it is all about, cares less, and, if the charges that the oil-control bill will create monopoly, increase the price of gasoline and put a lot of small operators out of business is repeated often enough, the measure may be voted down.

Both President Roosevelt and former President Hoover have approved the bill. President Roosevelt said: "You know, as I do, that an adequate supply of oil at reasonable prices is vital to the well being of the people of California and the whole nation. Overproduction means waste and waste means higher prices, both for domestic consumption and for purposes of national defense. My view is that the Atkinson law, if put into effect, will contribute to the best interests of the state and of the nation." Mr. Hoover said: "Adequate supplies of low-cost oil must be conserved for the efficient operation of our industrial society. Ample amounts of oil must be kept available for national defense. In my opinion, the California Oil and Gas-Control Act of 1939 is necessary and desirable legislation. I, therefore, urge that the people of California give favorable consideration to this act by voting yes on this measure at the special election to be held on November 7, 1939." There can be no doubt that these statements will carry considerable weight and this may prove a vital factor in the election.

Atkinson Oil Bill

The vote on November 7 is the result of a referendum directed against the Atkinson bill passed by the last session of the legislature and approved by the governor July 22, 1939. Briefly, it provides for the conservation, regulation and stabilization of production and distribution of crude petroleum oil and natural gas and the products thereof, and creates an oil and gas conservation and control commission; defines the powers and duties of the commission; authorizes it to prescribe rules, regulations and orders, and provides penalties for violation of the provisions of the act and of the rules, regulations and orders of the commission. It also levies a charge on the proceeds of oil and gas to pay the cost of administration and enforcement of the act. The Oil Conservation Commission to administer the act is to consist of the director of natural resources, director of public works and the director of finance. The director of natural resources is to be the chairman and administrative officer of the commission and receive in addition to his regular salary an additional $4,000 as administrator of the oil act. Governor Olson has already appointed Richard Sachse, a consulting engineer of Los Angeles, as director of natural resources, and thus the program is all ready to function, if the vote is favorable.

Among other things the act provides authority for the commission to collect data, check, test, gage and examine any and all wells, tanks, pipe lines, refineries and other facilities, to limit crude oil production and differentiate between legal and illegal, or hot oil, and its products. Underground waste is prohibited along with surface or physical waste. This section gives the commission authority to take any steps necessary to prevent inefficient, excessive, or improper, use or dissipation of the reservoir energy, either due to locating, spacing, drilling, equipping, operating or producing any well in a manner tending to reduce the total quantity of crude and natural gas ultimately recoverable from any field or zone. Purchase, sale or transportation of hot oil is prohibited. The bill covers every section of the industry and is even more embracing than the original Sharkey bill. Some operators and at least one and possibly two of the major companies are opposing the measure under cover. They do not like the political setup and would rather leave matters as they are, especially since crude and refined stocks on the Pacific Coast have been severely reduced. This group does not necessarily object to the present administration but is afraid some subsequent administration might do inestimable harm.

Arguments

The official ballot supplies several opinions for the guidance of voters. Governor Olson, requesting a yes vote, says: "This oil and gas-control act is a conservation measure to help secure a controlled supply of reasonably priced oil and gas for as long as possible, for national defense, and for the people. Its purpose is to stop reckless waste of these irreplaceable natural resources vital to the general welfare. The national administration and the U. S. Navy, both alive to the necessities of national defense and conservation, have urged California's cooperation with their conservation efforts by enacting this law. President Roosevelt and Secretary of Interior Ickes strongly urged its passage by the legislature. Those opposing all government efforts to protect public interest; those seeking to profit by excess and wasteful production of oil and gas are opposing this bill. They try to hide their true purpose by calling it another Sharkey bill, which it is not. The Sharkey bill was rightfully defeated because it located production control in the hands of the industry itself. This act places control where it belongs: in the hands of the peoples' representatives. This act will guard the peoples' interests in California's oil and gas resources to a degree never before realized."

Opponents of the bill charge it was "forced through the legislature in its closing hours, with clocks stopped, and lobbyists of certain major oil companies working strenuously for its passage."

Cash and Carry Would Curtail Marine Fuel Use

By H. STANLEY NORMAN

Here are two of Uncle Sam's men-of-war in a placid sea. In front is the U.S.S. Tennessee, while close on its heels is the U.S.S. Nevada

NEW YORK, Oct. 31.—A serious slump in the East Coast deliveries of marine fuel and lubricating oils is expected to be the immediate result of changes in the neutrality act. Adjustments of tonnage to offset the prohibition against use of United States-flag vessels in trade with belligerents will require from 60 to 90 days as minimum estimates.

Out of a total of 89,500,000 bbl. of United States fuel oil consumed in 1938 by domestic and foreign merchantmen, including tankers, nearly 60 per cent was supplied from the Atlantic Coast and a little more than a third of the Navy's requirements of 9,500,000 bbl. came from eastern refineries and terminals.

Most of the restriction in marine consumption will fall on the refineries and suppliers along the Atlantic Coast from Baltimore and Philadelphia to Boston. Nearly 50 per cent of the foreign-trade bunkering business is served from New York. Nearly 40 per cent of our residual-fuel-oil production last year went to supply these requirements. Residual fuel oil produced by United States refineries in 1938 totaled 294,972,000 bbl. and the marine consumption, including Navy and Army transports, totaled 99,000,000 bbl., according to preliminary estimates.

Marine fuel-oil consumption by domestic and foreign merchantmen in 1938 estimated at 89,500,000 bbl. has been exceeded in only 3 years. Peak marine consumption was in 1930 when 94,152,000 bbl. went into the bunkers of domestic and foreign vessels. The preceding 2 years, 1928 and 1929, started the real surge in marine consumption of residual fuel oil. Aside from the sharp jump of more than 78 per cent from 1919 to 1920 when marine use of fuel oil was in its infancy, the sharpest climb was in 1928 when the gain was 34 per cent. There was a steady decline during the depression but an upturn starting in 1934 has been continued to the present.

Use of residual oil as fuel in marine vessels received its first serious trial in 1914 when the Long Island Railroad Co. converted its New York Harbor fleet of 17 tugs and lighters into oil burners. In the same year United Fruit Co.'s passenger steamer Metapan was converted to an oil burner for service in the coastwise trade. The Navy consumed 500,000 bbl. of fuel oil in 1914 but that year was the real starting point of the modern marine practice. In 1917 the Navy became committed to a program of converting its coal-burning vessels to oil and to use of oil in all new construction.

Early Statistics Unavailable

Detailed statistics on other marine consumption of fuel oil are unavailable prior to 1919. Although figures were maintained on certain phases of bunkering prior to 1919 the data are incomplete.

Railroads were really the first to demonstrate the practicability of generating steam from oil-fired boilers and as early as 1908 the rail carriers consumed 16,871,000 bbl. of fuel oil. It is significant that in 1914, when the marine trade was first adapting its vessels to oil-burning furnaces the United States railroads consumed 31,093,000 bbl. of fuel oil.

While the neutrality-act revision will impose a restriction on marine consumption of fuel oil during the first few months of its operation, the prospects over a longer term are less depressing, although somewhat obscure at this time.

Adjustment of the merchant-marine tonnage to meet the restrictions imposed by the neutrality act will be started almost immediately and there are rumors such action has been under consideration by various steamship lines for weeks. When it is considered that two of the world's largest passenger liners, the Normandie and Queen Mary, have been tied to docks in New York Harbor since the war started it is evident an appreciable slice has been carved from marine consumption by the precautions of wartime. The Normandie and Queen Mary consume from 40,000 to 42,000 bbl. of fuel oil on each crossing, or about 80,000 to 84,000 bbl. for the round trip. During peace they completed one round-trip trans-Atlantic voyage each 10 days using approximately 2,880,000 bbl. a year, The smaller boats used in recent weeks for evacuation of Americans from the danger zones have compensated to some extent for the slump in consumption by the luxury liners withdrawn from service. Reasonably large passenger liners, such as the Washington and Manhattan, require only about half the fuel oil necessary to operate the Queen Mary and Normandie.

Belligerent and neutral European countries will be compelled to replace the service normally rendered by American-flag vessels when the neutrality-act revision becomes effective, assuming the president will follow the original plan to bar United States vessels north of 30° latitude. Diversion of foreign-flag vessels from trade with South America and the Far East and subsequent relinquishment of that service to American vessels is in prospect.

There is considerable foreign merchant tonnage on the Pacific Coast trading with the Orient which could be replaced with American vessels. This would free some Pacific Coast vessels for trans-Atlantic service and would take up part of the slack in the marine fuel-oil requirements. So far as could be learned in New York last week, however, all such plans of diverting boats from South American trade and for shifting foreign-flag vessels from the Pacific to the Atlantic are in embryo.

More than 50 per cent of the bunkering business for merchantmen of all flags in foreign trade is handled in the New York customs district. In 1938, when total foreign trade bunkering business from this country (exclusive of coastwise and in-

Acme

View of the steam turbines on the French liner Normandie, which are temporarily stilled as the ship lies in the New York harbor. The mammoth machinery dwarfs the engine-room men

WORLD MERCHANT AND TANKER FLEET

Year—	Tank steamers— Number	Tank steamers— Gross tons	Tank motorships— Number	Tank motorships— Gross tons	*Total tankers— Number	*Total tankers— Gross tons	†Total world merchant fleet— Number	†Total world merchant fleet— Gross tons
1938	922	5,408,974	733	5,306,706	1,655	10,715,680	29,409	66,870,151
1937	895	5,199,870	663	4,757,270	1,558	9,957,140	29,524	65,271,440
1936	883	5,119,488	582	4,075,933	1,475	9,195,421	29,197	64,004,885
1935	907	5,161,342	538	3,735,095	1,445	8,896,437	29,071	63,727,317
1934	923	5,245,486	497	3,422,989	1,420	8,668,477	28,964	64,357,792
1933	949	5,381,197	493	3,375,635	1,442	8,756,832	29,515	66,627,524
1932	969	5,462,131	489	3,346,690	1,458	8,808,821	29,932	68,368,141
1931	987	5,535,920	452	3,013,907	1,439	8,549,827	29,952	68,722,801
1930	969	5,377,119	339	2,159,249	1,308	7,536,368	29,996	68,023,804
1929	958	5,285,664	278	1,702,258	1,236	6,987,922	29,612	66,407,393
1928	...	.....	...	.....	1,167	6,544,263	29,387	65,159,413
1927	...	.....	...	.....	1,050	5,847,086	28,967	63,267,302
1926	...	.....	...	.....	1,006	5,598,198	29,092	62,671,937
1925	...	.....	...	.....	939	5,177,630	29,205	62,380,376
1924	...	.....	...	.....	943	5,193,704	29,024	61,514,140
1923	...	.....	...	.....	917	5,160,923	29,246	62,335,373
1914	...	.....	...	.....	500	†1,478,988	24,444	45,403,877

*Tankers 1,000 gross tons and over. Does not include sailing vessels and barges. †Vessels 100 gross tons and over. Does not include sailing vessels and barges.

MARINE CONSUMPTION OF FUEL OIL

Year—	Domestic and foreign merchantmen	Army and Navy transports
1914	.....	500,000
1915	.....	521,382
1916	.....	842,432
1917	.....	2,079,980
1918	.....	3,210,000
1919	26,531,000	5,845,000
1920	47,262,000	7,530,000
1921	46,197,000	6,372,000
1922	49,921,000	5,827,000
1923	56,631,000	7,044,000
1924	61,907,000	7,100,000
1925	55,397,000	7,404,000
1926	59,645,000	6,542,000
1927	63,125,000	6,506,000
1928	89,942,000	8,369,000
1929	92,870,000	8,192,000
1930	94,152,000	8,681,000
1931	83,559,000	9,203,000
1932	72,531,000	7,968,000
1933	70,445,000	8,000,000
1934	69,262,000	7,914,000
1935	74,581,000	10,428,000
1936	80,324,000	9,241,000
1937	84,990,000	9,135,000
1938*	89,500,000	9,500,000

*Partly estimated. Other data from volumes of "Mineral Resources," Bureau of Mines Mineral Yearbooks, and Bureau of Mines reports on fuel-oil consumption.

tercoastal consumption) amounted to 36,059,000 bbl., the New York customs district handled 17,123,000 bbl. The next largest district is Los Angeles where only 3,778,000 bbl. of business was handled in 1938. Galveston forged ahead of New Orleans last year to third largest, handling 2,880,000 bbl.

The tanker fleet, representing approximately a sixth of the world's tonnage, is an important factor in the marine consumption of fuel and diesel oil. Most of the tankers consume residual grades of fuel but popularity of the diesel-powered units is growing.

At the start of this year there were 1,655 tankers in the world having 1,000 gross tons and over, exclusive of sailing vessels and barges. The tankers represented 10,715,680 gross tonnage. At the same time the world merchant fleet, except sailing vessels and barges, and consisting of vessels having 100 gross tons and over, totaled 29,409 with 66,870,151 gross tonnage. In contrast, the total number of oil tankers in 1914, including vessels of 100 gross tons and over, is shown by Lloyd's Register at 500 and their total tonnage 1,478,988. The sharp growth of the tanker fleet alone is one of the important reasons why marine fuel-oil consumption has increased so markedly. Since 1935 there has been a steady expansion of merchant marine tonnage but it is still below the record high in 1931. Starting with the retirement of unnecessary boats in 1932 the world's merchant tonnage shrank until 1936 when new building programs were started in most large countries.

As another offset to the slump anticipated in marine-oil consumption, refiners anticipate that greater requirements of domestic industry producing war materials will stimulate internal use of residual fuels. Although domestic plants have been preparing for production of armaments and war materials since early September, full-scale operation and movement of finished equipment to points of export have been mostly delayed until neutrality-act revision was certain.

W.P.R.A. Regional Technical Meeting Held in Shreveport

SHREVEPORT, La.—The second 1939 regional technical meeting of the Western Petroleum Refiners Association met in Shreveport October 27. An attendance of over 100 refining engineers and chemists from the Arkansas-Louisiana-East Texas area heard papers on three technical subjects and saw a demonstration of tube-rolling at the Bossier City refinery of Arkansas Fuel Oil Co.

W. W. Scheumann, Cities Service Oil Co., Tulsa, opened the session with a paper entitled "Inhibitors for Cracked and Polymerized Gasolines," in which he traced the use of chemicals as antioxidants in gasolines. He said this appeared to be a complicated problem until it was recognized that relatively few, highly specialized materials could be used. The logical use of each type was indicated. (See p. 41 for complete paper.)

"Treating in Transit," a paper presented by R. P. Lowe, of Proportioneers, Inc., Providence, R. I., dealt with the use of proportioning pumps in the continuous treating and blending of refinery products. The blending of natural gasoline and naphthas, and the addition of tetraethyl lead, dyes and inhibitors to finished gasoline were explained, with emphasis on the ability to carry out the process in one step. Close specifications obtainable in blending lube oils were cited. In blending oils of high viscosity as from 500 to 2,000 seconds S.U. at 100° F. accuracy can be limited to 10 seconds in the viscosity of the blended product. With oils below 500 seconds S.U., a 4-second limit of accuracy is possible. A description of the proportioning pumps and manifold flow diagrams illustrated the application of the pumps to blending and treating.

The paper on "Combination Reforming and Polymerization," given by Dr. M. B. Cooke, Alco Co., New York, was of particular interest to those present due to the installation of such a unit at the local Arkansas Fuel Oil Co. refinery. Dr. Cooke cited the fact that, while reforming and polymerization were unknown in the refining industry 10 years ago, they have now replaced the former key processes in the modern refinery, relegating distillation and similar steps to accessory positions. He related the trend of the past 20 years, through the adoption of advanced methods of distillation, cracking, combination cracking, viscosity-breaking, reforming, polymerization, alkylation, and catalytic cracking.

The paper included discussions of naphtha reforming, polymerization, manufacture of isooctane, aromatic pyrolysis and catalytic reforming and cracking. As an example of the advantages of combining reforming and polymerization, the unit now in operation at the Arkansas Fuel Oil Co. refinery was described. The new plant incorporates three units, reforming, polymerization and gas absorption, and stabilization, using two stocks of light gas oil and naphtha. The use of a common, main fractionation tower was explained and the advantages of this method were cited. The plant yield based on runs in recent weeks was given as follows: gasoline 79 per cent, fuel oil 5.5 per cent, gas loss 15.5 per cent.

All technical papers were followed by discussions, in some cases, of considerable length. Following the presentation of the papers, the refiners gathered at the Bossier City refinery of Arkansas Fuel Oil Co. where a demonstration of tube rolling was given by W. H. Clendenin, Key Co., East St. Louis, Ill.

Speakers and association officials at the second technical meeting of the W.P.R.A. this year, held in Shreveport: W. W. Scheumann, Cities Service Oil Co., Tulsa; Dr. M. B. Cooke, Alco Co., New York City; R. P. Lowe, Proportioneers, Inc., Providence, R. I.; L. D. Mann, Cities Service Oil Co., Bartlesville, chairman of the general manufacturing committee, presiding at the meeting; J. C. Day, secretary manager of the W.P.R.A. and Leon Grosjean, secretary of the Ark-La-Tex chapter

Senator Joseph C. O'Mahoney, of Wyoming, chairman of the T.N.E.C., talking with William S. Farish, president of Standard Oil Co. (New Jersey), following the conclusion of oil hearings

T.N.E.C. Hearings Analyzed and Outcome Indicated

By HENRY D. RALPH

Henry D. Ralph, Washington correspondent of The Oil and Gas Journal, with an assistant, attended all the T.N.E.C. hearings on the oil industry and interviewed leading participants upon their impressions and conclusions. The accompanying article is a summation of the information thus gained and an interpretation of the most searching inquiry, in many respects, to which the oil industry has ever been subjected.

WASHINGTON, D. C., Oct. 30. — The 5-week study of the petroleum industry just completed by the Temporary National Economic Committee ranks as one of the most thorough investigations of any industry conducted by a governmental body in recent years.

Every aspect of the oil industry was discussed and every conflicting view presented. With few exceptions, the hearings resembled a round-table discussion more than an inquisition, and every opportunity was given for the introduction of evidence and the expression of opinions to counteract earlier testimony, so it cannot be said that the study was an ex parte or unilateral investigation.

Some of the witnesses may feel their statements were not well received, because of the severe questioning to which they were subjected and the apparent receptiveness of the committee to opposing viewpoints; but the committee as a whole gave the impression of being openminded and anxious to obtain all types of information.

It is true the American Petroleum Institute and the major oil companies were not permitted to tell their side of the story without challenge; but no one familiar with the procedure of congressional investigations could have put such an interpretation on the T.N.E.C.'s invitation to the industry to present its case. Disgruntled elements in the industry were permitted to air the complaints, which they have made many times in the past, but this, and the fact that spokesmen for major interests were severely grilled on the witness stand, by no means indicates that the industry failed to tell its story. In other industry hearings before the T.N.E.C. the Department of Justice or some other federal agency has prepared the initial evidence and subpenaed industry executives for questioning; and in many cases the industries concerned have felt this procedure was unfair and put them in an improper light. In comparison with the treatment given other industries, it cannot be said the oil industry faired badly before the T.N.E.C.

With all the industry's linen thus aired in public, the committee found relatively few sources of complaint. It found no one serious fault, no violation of law, nothing pointing directly to a reform by new legislation. Only two inferential charges of law violation were uncovered and they proved to be duds—the Pelley letter hinting at collusion between major companies and the railroads, and the charges that Wilmer R. Schuh ran the National Association of Petroleum Retailers under orders from major petroleum companies.

The detailed statements, charts, and statistics filed by spokesmen for the American Petroleum Institute and the volume of answers to questionnaires sent out by the T.N.E.C. make the record of the hearings an exhaustive textbook on the oil industry, and will doubtless provide the basis for many reports, speeches and articles. There was some regret that much of this carefully prepared material was simply placed in the record without immediate examination, but the thorough questioning of witnesses brought out the highlights of this material in a manner more readily grasped by the diverse membership of the T.N.E.C.

What sort of legislation, if any, will be recommended to Congress as the result of these hearings cannot be foretold; but it was evident from the type of questions asked that many members of the committee feel something could be done to apply to the oil industry the underlying thesis of the T.N.E.C., that the growth of modern corporations, with concentration of huge economic power, makes it necessary for the federal Government to take steps to insure the continuance of small competitors.

While the oil industry presented a very good overall picture, the hearings revealed a number of chinks in its armor. The principal weak spots are the way in which proration may operate against the interests of independents and may be used to influence prices; control of pipe lines by major companies; difficulties of independent jobbers and retailers in competing with the majors in the marketing end; and the failure of major-company accounting methods to show a clear segregation of earnings in various departments.

On other subjects the industry generally came through with flying colors, although other indus-

(Continued on Page 25)

TEXAS

LATEST RULING BY THE TEXAS SUPREME Court on the much-litigated Rule 37, Railroad Commission well-spacing rule, was handed down last week in the J. C. Tippett v. Gulf Production Co. case. In May 1935 Mr. Tippett was granted a permit to drill a third well on a 4.77-acre tract in Gregg County by the Railroad Commission on grounds that the third well was necessary to prevent confiscation. Gulf filed suit in District Court to compel the plugging of the well and judgment was entered ordering the well plugged. This court's ruling was upheld in the Court of Civil Appeals except as to the plugging of the well. The Supreme Court's ruling, in part, last week was:

"Plaintiffs in error contend the permit should be sustained as an exception because there is evidence in the record which would have justified the commission in granting it to prevent waste. As shown, the commission made no finding as to waste. The evidence at the trial does not show, as a matter of law, that Mr. Tippett was entitled to this permit to prevent waste. Under such a record, we overrule the contention. The opinion of the Court of Civil Appeals correctly reflects the facts shown by the record regarding the issue of confiscation, and correctly and conclusively demonstrates that the commission's act in granting the permit was, as a matter of law, in violation of its own rule.

"In the Gulf land case we held that 'confiscation' refers principally to drainage. . . . We think the opinion of the Court of Civil Appeals demonstrates that the facts of the record show, as a matter of law, that the two wells Mr. Tippett has will protect him against confiscation. We think the opinion . . . further demonstrates . . . that a third well would enable Mr. Tippett to recover more than his fair share."

ARKANSAS

THE ARKANSAS OIL AND GAS COMMISSION authorized an increase of 3,152 bbl. daily in production allowable effective November 1, bringing the state's daily production figure to 68,952 bbl. for both controlled and uncontrolled fields.

Biggest change was authorized for the Magnolia field, where allowables were increased 2,500 bbl. to 17,500 bbl. daily, the commission stipulating that an additional 2,500 bbl. daily would be allowed that field during November for wells now nearing completion.

The Village field was given an increase from 994 bbl. to 1,300 bbl.

Buckner field was given an increase of 350 bbl. to take care of new wells, to 2,500 bbl.

LOUISIANA

THE DEPARTMENT OF CONSERVATION increased North Louisiana allowables for November slightly, boosting the production in the Shreveport field 2,000 bbl. daily, increasing Cotton Valley Bodcaw-sand production and cutting Rodessa. The Shreveport field rules were revised to provide for an allowable gas-oil ratio of 4,000 cu. ft. per barrel in place of the former figure of 2,000 to 1. This was granted following a hearing in Baton Rouge, where operators favored the more liberal gas-oil-ratio allowable.

OKLAHOMA

ALLOWABLE PRODUCTION IN OKLAHOMA in November will be 429,000 bbl. per day or 4,800 bbl. more than in September. The excess was allocated to the stripper wells and unprorated areas.

Adjustments of the underproduction and overproduction growing out of the 16-day shutdown of fields in August will be completed during the November proration period, W. J. Armstrong, chief conservation officer, indicated Friday upon issuance of the Corporation Commission's monthly order.

The 16-day shutdown caught some of the producers with almost a full month's production, while others had not gotten their first 15-day runs. Provisions were made for equalizing the production during September and October. The October production record is not yet in and Mr. Armstrong doesn't know whether the books have been balanced.

Oklahoma's market was improved slightly during the closing days of October due to termination of the strike at the Gulf Refining Co. plant at Toledo. The Gulf was virtually out of the market for several months, but now is in need of additional crude, both for current refinery runs and storage. Mr. Armstrong indicated the Gulf would get an additional amount of Oklahoma City crude during November.

RICHARD SACHSE, consulting engineer of Los Angeles, Calif., has been appointed director of the California Department of Natural Resources, succeeding George D. Nordenholt. He formerly was consulting engineer and vice president of the Los Angeles Railway and former chief engineer of the California State Railroad Commission and chief consulting engineer of the Metropolitan Water District and the Los Angeles Bureau of Power and Light. If the Atkinson oil-control bill is approved by California voters November 7, Mr. Sachse, in his new post, will have direct charge of operations under that measure

STATE CAPITALS

MISSISSIPPI

GOV. HUGH WHITE OF MISSISSIPPI has declared a moratorium on the sale of all state lands excepting city lots, until the legislature, meeting in January, can act on reserving to the state the mineral rights of state lands sold. The recent increase in leasing activity, and oil interests in the state, have boomed the buying of state lands.

MICHIGAN

P. J. HOFFMASTER, STATE SUPERVISOR of wells, on Monday issued an emergency order removing all proration in the Columbia and old Salem fields on November 1. This is likely to result in a 1,000-bbl. daily increase temporarily from the 87 wells in the Columbia field, in Van Buren County, and a trifling gain in the 150 wells in the Salem field in Allegan County.

Except for those two fields, present proration limits on Michigan oil production probably will stand for some time. The state Oil Advisory Board held hearings at which both producers and purchasers expressed themselves as favorable to existing limits.

Dissipating gas pressure and water encroachment in the Salem and Columbia fields induced the Advisory Board to recommend removal of the limit there.

Because the area is characterized by small, compact pools, the Advisory Board also recommended that drillers be permitted to plot wells on 5-acre tracts, instead of the customary 10, in the Dundee Township field of Monroe County, in order to get maximum production from the Trenton formation.

Hoffmaster indicated Michigan production and demand has been brought into balance by the proration in effect since last August. Daily production for October is expected to average about 71,000 bbl. a day. Present demand is reported to be 70,250 bbl., of which more than 52,000 bbl. is used by Michigan refineries."

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers sliced off another 10 bbl. per day from the allowable of wells in the upper bracket, and the maximum allowable for any wells in the state will be 210 bbl. daily in November. Consistent reductions for several months have cut the top-bracket wells from 250 bbl. per day, which prevailed last June, to their present status. Adoption of a uniform method of allotment last June and operation of the plan since that time, has proved to be a stabilizing influence in crude-oil production. The Central Committee at its last meeting fixed the November allowable at not to exceed 599,000 bbl. daily which is approximately the same amount set for October.

KANSAS

W. L. HARTMAN, OIL OPERATOR OF WICHITA, attacked the Kansas Corporation Commission's method of prorating oil production as "discriminatory" in a hearing before the commission on Monday.

An operator in the high-potential Hittle field of Cowley County, Mr. Hartman showed that in 10 fields the number of barrels of potential production to 1 bbl. of allowable, fixed by the commission for September, ranged from 4.6 bbl. for the Greenwich field in Sedgwick County to 208 bbl. for the Hittle.

Another chart listed some 60 wells with larger monthly allowables than the state's largest well located in the Hittle pool.

The September allowable for the Hittle pool was shown to be 29,988 bbl. compared with a potential of 175,345 bbl.

L. L. Foley, consultant engineer testifying for Mr. Hartman, said the Hittle pool potential was 4.01 per cent of the state's estimated potential production, 4,368,432 bbl. monthly, yet this pool was restricted to 0.601 per cent of the state's allowed production.

"The Hittle is allowed only 14.9 per cent of its portion of state demand based on relative potentials," Mr. Foley said.

ON APPLICATION OF SEVERAL OIL COMPANIES the commission opened its rehearing on rules and regulations, issued in September, aimed at governing the state's oil production "to prevent waste."

Two major points which have been questioned by the oil group and which have been temporarily suspended pending possible revision by the commission are: Fixing a maximum well potential of 2,500 bbl. daily, and a double minimum of 30-bbl. allowable for wells on 20-acre tracts, compared with only 15-bbl. allowable minimum for 10-acre tract wells.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Market Responsibility

Neutral observers who were in constant attendance at the hearings of T.N.E.C. (Temporary National Economic Committee) during the 5 weeks it was investigating the oil industry are in substantial agreement that the industry presented an excellent case.

Certain outstanding accomplishments of the industry were so conclusive that the membership of the T.N.E.C., which included representatives of several government departments as well as members of the Senate and House, conceded that the industry had reason to be proud of what it has done.

Employment conditions were not approached in any other major industry; price records were far below the average; steady progress in finding and producing oil with a minimum of waste; proficiency in refining, both in lowered costs and improved products, so impressive that members of the committee expressed astonishment at these achievements, and there was no sign of criticism.

There was no evidence of profiteering or collusion; profits of the industry, at best, were modest.

These accomplishments applied to the production, transportation and refining branches of the industry. When it came to marketing operations some members of the committee seemed to feel there were indications of weakness.

Most of the evidence heard on this phase of operations was presented piecemeal, including that by those who obviously had no clear picture of actual conditions, and by others who sought to magnify conditions which are not representative.

As to this, it is necessary to keep in mind that retail marketing is completely out of the hands of the oil industry; and, to a lesser extent, the same situation applies in the jobbing markets.

The evils complained of, as a rule, are not peculiar to the oil business, but are inherent in our whole system of distribution.

One of the weaknesses of our economic development in recent years has been that marketing has not kept pace in efficiency with the progress in the production of raw material and the manufacture of finished products.

The oil industry's increasing efficiency in production, refining and transportation accounts for the fact that there have been steadily decreasing costs in the price of finished products to the consumers. In contrast, the marginal allowance for retail marketing of gasoline is much larger than it was 15 or 20 years ago.

Some of the larger oil companies have made intensive studies of this problem so far as their own operations are concerned over the past few years and have been able to make some reduction in their costs.

Basically, however, this matter of marketing practices is the immediate problem of more than 10,000 jobbers and a quarter-million independent dealers scattered throughout the country and operating under a wide variety of conditions.

The Federal Trade Commission has suggested a special investigation of this phase of the industry's operations. If carried out for the purpose of securing basic information, it would be a valuable contribution to the solution of the problem. Inevitably such an investigation would overlap into the general problem of wholesale and retail merchandizing applying to all large industries.

The oil industry would be glad to see this end of the business placed upon the same sound and safe basis of efficiency that has been demonstrated in the other divisions. In the meanwhile the industry cannot be held responsible for the conditions over which it has no control.

Oil May Be Decisive Factor In the European Conflict

OIL won the last world war, according to the testimony of Lord Curzon; "the Allies floated to victory on a flood of oil"; and, from the stress being laid upon oil supplies in the present belligerent countries, oil is likely to prove the decisive factor in this conflict.

The submarining of tankers bound for British ports has been a feature of Germany's attempted blockade of Britain. One recent activity of the Reich raiders has been in the Atlantic, just outside the Gibraltar entrance to the Mediterranean, "the lifeline of the British Empire," particularly so in obtaining oil from Iran and Iraq, or even the East Indies.

England's faith in her bulwark of battleships has been shaken by the German aerial raids on the naval base at Rosyth, near Edinburgh, and the Scapa Flow fleet hideout on the northeast coast of Scotland. Berlin avows its intention of bombing British dockyards and naval bases so that the British Navy might be left without the essential land terminals.

All this aerial activity is dependent upon the German supply of aviation gasoline for its bombing fleets, just as Britain is dependent on oil for its warships and gasoline for its aviators.

This, of course, is entirely aside from the need for oil for the movement of the armies, tanks and trucks, as well as that required for the industries engaged in the manufacture of munitions, and all the supplies for military, naval, aerial and civilian purposes. The civilian activities are not least important, since they must be kept going not only to supply the armed forces, but to continue production and commerce to provide the money to carry on the war.

Germany's effort to prevent England from getting oil is not confined to blockading tankers. It was seen in Reich Ambassador von Papen's reported attempt to prevent Turkey's signing the pact with England and France. Von Papen is said to have told the Turks that, if they would line up with Germany, Berlin would see that Turkey got back the Mosul oil fields in Iraq. The Mosul area belonged to Turkey before the World War, but was not exploited until Britain obtained the mandate for Iraq. The Turks, however, turned down Von Papen's offer.

Another report had the Soviet planning to take over the Iraq fields, in the manner in which Russia has absorbed the Baltic republics. This fear is based on the old Czarist drive toward India through Afghanistan, which haunted British statecraft for a generation. "The Russians at the Gate of Herat" (the Afghan citadel) was a British best seller years ago. At that time Persia, now Iran, was divided into two spheres of influence, the Russians controlling northern Persia and the British the southern half with its oil fields.

The successful revolt of Riza Pasha (now ruler of Iran) against the shah of Persia, and the effects of the World War and the revolution in Russia, removed Russia from Persian politics, but it is now suggested the Soviet is resuming its ambitions in that quarter. Pessimists see a possibility of Russia, aided by Germany, threatening British interests in both the Iran and Iraq oil fields, which, however, could become a probability only if Germany won the war.

Meanwhile the Polish fields, which produced about 10,000 bbl. a day, turned over to the Soviet by Germany, are said to have been so wrecked that they will be of no use to Germany for a year or more.

From Rumania comes a tale of a crew of Texas oil-field workers ready to put the Rumanian wells out of service in case of a German invasion of Rumania. It will be recalled that the overrunning of Rumania by Germany in the last war was preceded by precautions that cheated the invaders of Rumanian oil for a long time.

The hesitation of Italy to enter the war has been attributed to various reasons, but there may be more to the fear that the Italian fleet might find itself without oil if it attempted to cut the British life line through the Mediterranean, or to cut the French seaway to its African colonies and African troops.

On the other hand, the vulnerability of British and French refining centers to aerial attack is causing concern in both countries. Reports of vast underground reservoirs being stored with oil for war reserves have appeared from time to time during the past few years. But any conceivable storage of this sort must be of comparative value. The possibility of constructing an underground refinery in France has been discussed. Somewhat similar precautions have been reported from Germany in connection with its manufacture of petroleum substitutes.

So far as Britain and France are concerned, imports of refined products (risky though shipment may be if the Reich raiders can enlarge their efforts) seem to be more favorable than dependence upon refineries at home within range of German bombers.

Russia has seized the oil fields in Poland, around Jaslo and Drohobycs and Lwow (Lemberg), the refinery center. Germany covets the oil fields in Rumania at Campina and Ploesti. Russia is reported having designs on the fields in Iran (Persia), and at Kirkuk in Iraq, as well as for a possible drive through Afghanistan to India

Sales of Motor Vehicles 2,347,865 in 9 Months

NEW YORK.—Automobile retail sales which have been steadily gaining ground throughout the year were consolidated in the total for the 9 months ending September to reflect an advance of 42 per cent by comparison with the same period of last year, according to the Automobile Manufacturers Association. During the 9 months 2,347,865 motor vehicles were delivered to consumers.

September retail sales of passenger cars and trucks, amounting to 169,741 units, were 46 per cent ahead of September 1938, while the seasonal let-down during the last month of the manufacturing year was moderate, as indicated by an August-September decline of only 19 per cent.

Passenger car deliveries totaled 1,955,941 units in the 9 months, the association reported, representing a gain of 46 per cent by comparison with last year. Commercial vehicles were up 20 per cent from the 9-month term last year, with a retail-sales total of 391,924 units.

September retail sales of passenger cars totaled 139,660 units, compared with only 90,629 last year, or a gain of 54 per cent. Truck sales totaled 30,081 for the month, compared with 25,776 a year ago, representing an increase of 17 per cent.

California Gasoline Sale Showing Large Gain

SACRAMENTO, Calif.—Showing the highest percentage of gain for any 1 month since August 1937, gasoline sales in California during September amounted to 157,553,366 gal., the state Board of Equalization reported. The tax amounted to $4,726,600.98, an increase of 10.50 per cent over the same month in 1938.

With the single exception of April, each month's sales of gasoline this year have been greater than those of the same months of 1938, and it is anticipated that the record gasoline-tax income of $51,601,430.04, last year, probably would be exceeded.

Farish Frank Witness; Offers Suggestions

By HENRY D. RALPH

WASHINGTON, D. C., Oct. 30.—A comprehensive review of practically every subject mentioned in the hearings was afforded the T.N.E.C. during the 3-day testimony of the closing witness, W. S. Farish, president of the Standard Oil Co. (New Jersey). Partly because of his position in the industry, partly because he was selected by the American Petroleum Institute to summarize its case, and partly because of his personal knowledge of the industry and willingness to discuss all questions, the committee used him as a foil to bring out every point of view in the minds of any of the members.

The rambling nature of this questioning demonstrates the diversity of opinion within the T.N.E.C. It brought out various points of view on the part of committee members, such as a lengthy statement by Leon Henderson, a member of the Securities and Exchange Commission and formerly executive secretary of T.N.E.C., whose opinions carry considerable weight with other members of the committee.

Mr. Farish closed his 3 days on the stand by stepping out of his role as an oil man and giving the committee his reactions as a citizen. He read a statement suggesting that the greatest competition which the T.N.E.C. could make to industry would be to prevent drastic changes in government policy and to create mutual confidence between business and Government.

While Chairman O'Mahoney was questioning Mr. Farish about charges that major oil companies were able to market their products at a loss because of great profits from their pipe lines. Mr. Farish said his company carried on its marketing at a profit. Marketing losses were suffered during 1930 to 1935. There were no transportation losses for the firm during those years.

Chairman O'Mahoney commented that "this is just the point these small independents make."

"I don't for the life of me see how Government can take care of every business man that fails to make a profit," Mr. Farish replied.

Senator O'Mahoney remarked that "if we don't do it, under democratic government, then the small independent may be crushed."

"I don't think it can be done by democratic government," Mr. Farish snapped. "If it is done, it will be done by a Hitler-type government."

Federal Control Hinted

Mention that exisiting state and federal business regulatory laws are not such as to cover the competitive situation existing in the oil industry and inferential suggestion of the need for suitable federal control statutes featured the Tuesday afternoon session. Leon C. Henderson, S.E.C. commissioner-member of the committee, pointed to these conclusions in summarizing his analysis of the testimony, commending Mr. Farish and the industry upon the case presented and recapitulating his reaction.

"As I see it in this industry," said Mr. Henderson, "your argument is that because of its efficiency there is, and there is likely to be, a fairly wide field of opportunity for the retailer at the retailing end, and that at the prospecting end the adventurer, the individual, the enterpreneur will have also quite a range for some time to come. From the very nature of the amount of capital that is required from the claimed advantages of the integrated company, it seems that we can look forward in the future to not any great diminution of the concentration of ownership and direction over pipe lines, refineries, ownership of proven reserves, perhaps a bond business which we haven't touched, and some of the other lines, and it seems that because of this almost inevitable form of business organization which has evolved, that it is the suggestion of many of the witnesses that it ought to be recognized and dealt with as a form of organization."

Continuing, Mr. Henderson said:

"May I point out some of the things which seem to me pertinent as to the general characteristics of that type of business organization of a gigantic industry. There seems to be no doubt that you get increasing stability in crude prices and you get a general acceptance by virtue of the nature of things, of a price leadership, a price leadership which, it has been argued, does not derive from any concerted action that is in flagrante delicto so far as laws are concerned.

"Undoubtedly there is a communality of practice in a general acceptance in the industry of certain things which are alike in their action. The Iowa plan, for example, while not widespreadly accepted, was taken throughout the industry. In a number of cases the accounting practices and the restatement of stock following the logic of events seemed to come along about the same time.

"So far as the attitude on conservation, proration, unitization, it seemed very definitely that these policies, which are growing, are likely to be those which favor a large amount of resources in the operating companies. This is my own observation.

"And even if there should be a large discovery similar to East Texas, undoubtedly there would be state legislation which would follow fairly

Mr. Farish Speaks as a Citizen . . .

At the end of the hearings before the T.N.E.C., W. S. Farish said:

"Now that these hearings on the oil industry are over, I should like to step out of my role as a representative of the oil industry or as president of the Standard Oil Co. (New Jersey). I want to make a few personal remarks about my reaction as a citizen to these hearings and on the problems of full employment of men and capital."

Saying the committee "has an opportunity to make a real contribution toward establishing mutual confidence and respect between business and Government, which would have more effect in putting men and capital to work than anything else you might do," Mr. Farish concluded:

"As a good southern Democrat of long standing I am slow to approve drastic changes in government policies and principles. As a business man myself and also as a student of the reactions of business men, I urge you to consider the emotions and reactions of those who risk capital and employ labor. Do you realize that too drastic changes cause them to lose courage? Do you realize that once changes have been made—and there have been many in the past 10 years—stability of direction is essential to the renewal of courage? If Government would show more stability of purpose and firm adherence to principle, one great, if not the greatest obstacle to the full employment of men and capital would be removed. I hope therefore that your committee will review the real impact of government policies on uncertainty and their relationship to the will and ability of business to employ both labor and capital more fully."

quickly, which could have as its aim some conservation or stabilizing effort.

"It seems to me, then, that we have got something decidedly different from the commonly accepted ideas of what produces free and complete market competition, and that the sooner the essence and the realities of this industry are understood, the sooner the industrial problems can be dealt with on one hand, so far as business policy is concerned, and on the other hand, so far as governmental policy is concerned.

"And I seem to sense running through the testimony, a feeling that some of the business policies complained against are somewhat directly affected by the nature or concept of competition as they exist in this country and as they are reflected in our laws relating to competition, and also as they are related to what the existing laws are regulating the oil industry.

"For my part, I have not discussed this with any members of the committee, but I think we are further along toward acceptance of these realities as we go through these hearings."

Queried by The Oil and Gas Journal representative afterward, Mr. Henderson said his statement, boiled down, meant:

"Competition between large business units is a decidedly different thing from that which is presupposed from much of our economic thinking as reflected in existing antitrust laws and such federal and state business regulations as they exist.

"It's been shown by the testimany that the large unit is aware of his price decisions on his other large competitors and, as a result, competition as most people visualize it does not take place in this industry generally. It takes the form of nonprice competition, subsidies, differentiation of products by advertised brands, and of tendencies toward stabilization."

This meant that existing antitrust and fair-trade-practice laws, state and federal, are not such as to cover the type of competitive situation presently existing in the oil industry because they are based upon the old idea of business competition, i.e., price alone.

His whole inference was the need for federal legislation to reach the situation although he would not admit that was his recommendation. Observers have interpreted the attitude of the T.N.E.C. towards the oil industry as one of admitting the situation to be what it is and to declare it imbued with the public interest to the extent of declaring it a public utility and regulating it accordingly. Tying into this interpretation is Mr. Henderson's remark that "the sooner the essence and the realities of this industry are understood, the sooner the industrial problems can be dealt with."

Previous to his speech Mr. Henderson had questioned Mr. Farish about marketing, especially as to the Iowa plan. Mr. Farish stated that Standard of New Jersey is entirely pleased with the Iowa plan, and that it had leased 600 stations before the plan was inaugurated generally. Mr. Farish maintained that the adoption of the Iowa plan had no influence over the margin between what the jobber pays and what he receives for gasoline. He thought the trend for the majors to get out of the retail field would continue and that it would not mean a narrowing of opportunity for independent retailers. "This is a matter of business policy rather than a humane policy," he stated. He did not foresee a growth in the type of "subsidy" which the Iowa plan has produced, i.e., station leases at less than normal rates, loaning of equipment, pumps, etc., construction and maintenance of station premises, etc. The witness stated that his company's returns from its owned-operated retail outlets were nominal, "in the black," but not substantial. Price competition among major companies is so tight and the jobbers' margin also is so tight that they are likely to produce other forms of competition.

Incident to a discussion of patented cracking processes Mr. Farish pointed out that the Ethyl Corp. now has 16,339 licensed jobbers.

He pointed out that pipe lines are now common carriers and that the posted-price system has displaced the contract system for selling crude. He viewed the sale of oil under contracts running for 6 months or a year as particularly undesirable because it was unresponsive to current prices. Mr. Farish emphasized that "crude-oil pipe lines are common carriers in law and in practice and any user or prospective user can get service, that most pipe lines are operating below their capacity and that they are hungry for business."

He continued that: "There is every reason why they should not be divorced," that the present set-up was necessary to enable them successfully to carry on their function, and that there was no essential conflict between their status as a plant facility and their status as common carriers. Pipe lines separately owned, he explained, would be up against many difficulties in their day-to-day operations in deciding what to do with the supply of oil.

The former tank-farm system was denounced as wasteful and expensive. He rejected any inference that pipe-line ownership and operation by integrated companies reacted to the detriment of independent marketers or refiners. Minimum tenders of 25,000 bbl. were not regarded as a handicap by Mr. Farish who pointed out they have 500-bbl. minimums under Texas laws and that any aggrieved party could protest the reasonableness of any tender to state regulatory bodies or to the Interstate Commerce Commission.

Discuss Ajax Pipe Line

Discussion turned to the Ajax Pipe Line and Mr. Farish said negotiations were afoot looking to its reorientation in the light of changed conditions in the Chicago marketing area arising from the flush production in Illinois. He said they were willing to have this crude pipe line converted to a gasoline line but the co-owning interests may not be willing to have their competitors make such use of it.

Mr. Farish was asked whether he had given any thought to what the federal Government might do to help conservation. Admitting that he had anticipated that very question Farish produced a prepared memorandum embracing his suggestions for federal legislation.

Entitled "Constructive Suggestions as to What the Federal Government Might Do," the memorandum follows:

"(*a*) It would be highly desirable for the Bureau of Mines to extend its work along the lines of helping to establish standards of efficiency in production. Studies and reports of procedures and methods of setting up better standards should be made available to the states. Critical studies might even be made of the proration procedures in the various states in the light of the standards considered desirable by the Bureau of Mines. The intent of these studies should be to help the states to overturn the rule of capture.

"The Bureau of Mines might also make studies of facts bearing on the problem of doing equity among different owners in the same field and among different fields.

"All this material should be made available to the state proration authorities. If necessary, the Bureau of Mines should have additional appropriations to cover the cost of making these studies.

"(*b*) The Robinson-Patman Act needs to be clarified in several respects:

"1. It is now so drawn that it is very difficult for a company to know when it is violating the law.

"2. It should be made clear that a difference in the functions performed by a particular type of distributor is a proper basis for price differentiation.

"(*c*) Because costs, especially marketing costs, for particular commodities are so difficult to determine, the language of the act with respect to cost as a defense of price discrimination should be liberalized."

Of interest also in Wednesday's hearing was the expression by Mr. Farish of the opinion: "I look for the price for 36-gravity crude oil to stay around $1.20 per barrel for many years in the future."

Conservation and proration, Mr. Farish said, should not be used to fix prices. The witness declared it would be stupid to say proration did not affect prices but he differentiated as between making prices uniform and stabilizing price, which later, he said, proration does.

Queried as to the desirability of a countercheck against the state administration of proration, Mr. Farish said that was now present in the course of lowering the tariff on crude or through repeal of the Connally Act. "That is the only admonition needed," he said. He said it would be most effective for the federal Government to admonish the proration states if at any time the Washington authorities felt the states were "rigging prices" through proration.

Congressman Williams questioned Mr. Farish as to the desirability of government standards controlling proration if such standards are to be established. Mr. Farish replied that would not be necessary, that he was opposed to the federal Government doing anything which the states can regulate. "If you are going to put us in the same class as agriculture, then we are going to get our hand in the public treasury too."

Mr. Farish explained that hesitancy by oil companies over a long period to change their posted price (due to the unenviable unpopularity it creates for a company), meanwhile paying prices under the posted amount, tends to cause sharper price reductions than would ensue if posted prices were allowed normally to reflect the market. Thus a 5-cent-a-barrel reduction immediately a surplus stock situation begins to appear would foreclose a 15 or 20-cent reduction later or when the trend has backed up huge stocks.

"There's a tendency in the industry today whereby crude-price changes lag beyond production and prices. What I am suggesting is that proration authorities would be helped if price changes were more frequently reflected in posted prices." No one wants to take the responsibility for a price cut, he said, because it brings all kinds of reactions, most of them unpleasant. There is a tendency to delay and when the change finally comes it is worse. "The regulatory fellows think it is their job to hop on the man who cuts the price," Mr. Farish added.

Rehearing on Elk Hills Case at Los Angeles

SAN FRANCISCO, Oct. 30.—The United States Circuit Court heard arguments Friday in the appeal of the Standard Oil Co. from a $7,000,000 judgment awarded the federal Government by the Los Angeles federal court in litigation involving the Elk Hills oil reservation.

The arguments were on a rehearing ordered by the court last month after Justice William Denman disqualified himself and Justices Clifton Mathews and William Healy were unable to agree on a decision. Submission of the case was vacated and this rehearing ordered.

T.N.E.C. Hearings Analyzed and Outcome Indicated

(Continued from Page 19)

tries have been severely criticized by the Government on many of these points.

On labor policies, the industry got a clean bill of health from the standpoint of growth and stability of employment, wages paid, hours worked, and absence of labor troubles. The only flaw in this picture is the allegation of low earnings and long hours of operators of filling stations, both independently owned and leased from the major companies.

Competition was shown to be intense among the major companies, although several members of the committee pointed out that very often this competition is not one of price but takes other and more subtle forms. No charges of collusion or conspiracy were sustained, even though the observation was made repeatedly that the major companies adopt parallel methods, and the committee exhaustively investigated the matter of price leadership.

Nothing was presented to mar the industry's record of research, technological advancement, improvement of quality of its products, stability of consumer prices, conservation of its raw materials and byproducts, and general efficiency and industrial progressiveness. Except for minor criticism of some instances of capital write-downs and payment of dividends out of surplus, the industry escaped charges of financial manipulations and improper corporation management; and its record of earnings, financing practices, and constant provision of adequate capital was shown to compare very favorably with American industry in general.

Conspicuous by their absence were discussion of the tremendous amount of taxes which the oil industry supplies to federal, state and local governments, and the importance to national defense of a strong and unified oil industry. Aside from these two subjects, practically every aspect and problem of the industry was discussed at some point or other during the hearing.

Failing to find any evidence of organized conspiracy to keep out competitors or to maintain prices to consumers, the T.N.E.C. turned its attention to economic and technological factors influencing competition and prices which are not illegal but which have caused many complaints and which may be operating against what some members of the committee conceive to be the public interest. The chief of these are conservation practices, pipe-line ownership, and the marketing situation.

On conservation and proration the evidence was divided and the committee seems to be badly split. It was demonstrated that production is much more efficient now than it was a few years ago and that proration is resulting in a greater ultimate recovery of oil; also that even the highly scientific exploration methods have not displaced the wildcatter and independent producer. On the other hand, it was shown that complete application of scientific methods of proration, and unit operation with production limited to the technological optimum, might result in an insufficient supply of crude to meet consumptive demands; and it was also shown, and admitted by some advocates of the present methods, that prices and market demand can and do influence proration orders to a greater or lesser extent.

The interstate oil compact was smirched somewhat by the realization that its functioning can be influenced by price factors in spite of the congressional admonition against this; and the Connally Act was shown to be not indispensable; although the Bureau of Mines monthly demand forecast was closely scrutinized it escaped without much criticism. Much testimony was put into the record in support of the fullest possible application of conservation measures, with the assistance of the federal Government; but a considerable portion of the T.N.E.C. membership appears to hold the view that a low price of gasoline to the consumer is more important than the conservation of petroleum for future generations, and that any conservation practices which have an effect in reducing production and increasing prices are suspect, if not directly contrary to the public interest.

The refining branch evoked no criticism from the committee, and there was praise for the technological improvement and the competition among companies for constantly greater efficiency in refining.

The committee appeared to think the pipe-line situation was not completely convincing; seemingly having difficulty reconciling the assertion that pipe lines are a plant facility with the contention that pipe lines are common carriers under the law. Advocates of pipe-line divorcement, however, failed to make a case, but the committee appears to be unsatisfied that the majors are not making large profits from pipe lines which are or may be used to subsidize losses in other branches. It is evident the committee feels pipeline control gives the majors a powerful economic weapon and a competitive advantage, and that pipe-line regulation by the Interstate Commerce Commission is little more than nominal. It would be a fair assumption that the T.N.E.C. will recommend not complete divorcement of pipe lines but a much closer regulation of their construction, rates and charges, and that pipe-line earnings be so segregated in corporation accounts that there will be no mystery regarding these earnings, and rates can be closely related to costs.

Marketing Case Weakens

On marketing, the industry's case was the weakest. Instead of finding a conspiracy among major companies to divide the markets among themselves to the exclusion of independents, the committee discovered intense competition among the majors to the detriment of independents trying to exist amidst a battle of giants. The impression that major companies market at a loss or virtually without a profit remains in the minds of most of the committee members despite emphatic denials; and the committee was much impressed by the recital of the wide variety of complaints about marketing practices on file with the Federal Trade Commission. The testimony of filling-station operators and other witnesses regarding the difficulties of independents in retaining their competitive status, although sometimes presented in poorly organized form, made quite an impression on the committee.

Conflicting remedies for the marketing situation were suggested, for it was shown that independent filling-station operators are often as anxious to maintain prices as are large marketers; and members of the T.N.E.C., whose chief concern seems to be the lowest possible consumer price, are not likely to approve any marketing plans which would permit retailers to prevent price competition on the part of either majors or independents. Neither would such elements tolerate a fixed jobber or dealer margin high enough to permit inefficient distributors to remain in business.

There appears to be some sympathy for a federal law divorcing marketing from other branches along the lines of the meat-packers consent decree; but no convincing case for such divorcement was made at these hearings. Another suggestion is that the Robinson-Patman price discrimination law be clarified, since it was shown that much of the marketing competition is not in price but in service, to consumers and dealers.

Turning to larger aspects, the hearings demonstrated a tendency on the part of some members of the T.N.E.C., which has been evident in other industry hearings, to suggest a policy on the part of the federal Government of treating large corporations differently from their smaller competitors. This idea is rather nebulous yet, but many hints were dropped that perhaps when a corporation becomes so large as to play a dominant part in pricing and other policies it should be given a status something like that of a public utility and placed under federal regulation to control its growth and activities in order to leave a field for competition of small units. If such a policy is adopted, the oil industry would make a particularly good guinea pig because of the rather clear line of demarcation between integrated and non-integrated companies.

Should this philosophy prevail it would mean that the existing form of the industry would be accepted, and, instead of attempting to break up major companies into their component parts, they would be retained as a whole but regulated in such a way that each department would face competition with independents on its own feet.

The diverse membership of the Temporary National Economic Committee should be kept in mind in weighing the treatment given oil-company witnesses and in forecasting possible legislative recommendations. It is composed of three members of the Senate, three members of the House, and representatives of six government departments, and no two of these see eye to eye on all subjects. This largely accounted for the severe grilling to which the witnesses were subjected because each questioner sought to bring out points to substantiate his own theory; but, while this undoubtedly discomfited the witnesses, it resulted in a thorough and generally fair investigation, since the questions of conservative members offset those of the inquisitorial or reformer type. Witnesses, from the biggest names in the oil industry to unknown filling-station operators, were treated with equal respect and subject to equally severe cross-examination; and there was an evident attempt to exclude irresponsible and unsubstantiated testimony.

At times the discussion became rather heated but no tempers were lost and, on the whole, the questioning was kept on a friendly plane. The committee's interest in the evidence was shown by the large attendance at all the hearings with most of the congressional members present even though Congress was in session. Departmental members were represented by alternates a good deal of the time, but they took an active part in the questioning and most of them showed they had carefully read the advance statements of the witnesses. A panel of Department of Justice attorneys had been assigned to cross-examine the witnesses, but it is significant that the committee members themselves did far the greater part of the questioning, in marked contrast to other T.N.E.C. investigations.

California Tideland Suit by Government Feared

LOS ANGELES, Calif., Oct. 30.—A possible suit against the State of California over title to the oil-producing tidelands off the shores of Wilmington and Long Beach is under study by the Department of Justice, it was reported here.

Although Attorney General Murphy emphasized he could not confirm reports that a suit is being planned, he admitted his experts are working on the tangle covering ownership of the property. Admission that department attorneys are studying the subject was received as the first official confirmation of a report which originated on the West Coast about 2 weeks ago. At that time it was hinted the Government was preparing to challenge the right of California to properties which include approximately $2,000,000,000 worth of submerged oil and filled-in lands covering a large section of Wilmington.

Anxiety of the Navy Department over the acquisition of Reeves field for a naval air base was said to have been largely responsible for the Department of Justice interest in reviving the controversy.

Instigation of a suit against the title to the California submerged oil lands will result in a sharp congressional fight over state sovereignty as it applies to similar properties on both the Pacific and Gulf coasts, according to members of the House judiciary committee and the Senate public lands committee, which last spring held extensive hearings on a bill proposing that the Navy Department should be awarded the southern California properties for oil-conservation purposes.

Passage of the legislation would jeopardize title to all submerged oil, filled-in lands and harbor developments along the entire coast line, it was argued.

Until the Interior, Navy and Justice departments evince a new interest in the struggle to seize the California tideland oil properties the bills, now pigeonholed in the House and Senate committees, are believed to have no chance of passage. Renewed efforts to bring the legislation to a vote are anticipated early in the regular session of Congress in January.

Ickes Urges Conservation Of Oil and Natural Gas

NEW YORK.—Secretary Ickes told the National Coal Association meeting in New York that unless a more conservative policy is adopted in oil production "we will prematurely be forced to turn to synthetic gasoline or to expensive substitutes for our supply of liquid fuel.

"The situation in oil and natural gas is more critical. Our resources of these fuels are definitely and seriously limited. The National Resources Committee states that our proven reserves have been estimated at 15 billion barrels, which is only about 12 times our consumption in the one year of 1937.

"Our natural gas resources have been estimated at from 60 to 100 trillion cubic feet, or at most, about 50 times the 1937 production. Despite this, we are allowing our oil and natural gas resources to be exploited without that careful regulation that would have regard for both the immediate and the future needs of the nation."

Cole Committee Hearings At Washington, Nov. 6

WASHINGTON, D. C., Oct. 30.—Chairman Cole of the House oil subcommittee announced today hearings on conservation practices will start November 6 and continue all next week, with only government officials as witnesses. Later hearings may be held elsewhere but the program is not completed.

Witnesses Monday and Tuesday will be experts from the Bureau of Mines and U. S. Geological Survey, bringing up to date material published by the preceding Cole committee report. Secretary Ickes will appear Wednesday, followed Thursday and Friday by officials of the Army and Navy and National Resources Planning Board.

Appeal N.L.R.B. Order

NEW ORLEANS, La., Oct. 30.—The Humble Oil & Refining Co. has petitioned the U. S. Fifth Circuit Court of Appeals to set aside a National Labor Relations Board order disbanding its company unions at the Baytown and Ingleside, South Texas, plants. The petition alleged the board discriminated against the company in allowing introduction of certain evidence.

Michigan-Toledo Pipe-Line Rate

Michigan-Toledo Pipe Line Co. has issued the following local tariff for the transportation of crude oil: From Chelsea, Mich., to Bay Shore, Ohio, or Toledo, Ohio, 4.60 cents a barrel; from Dundee, Mich., to Bay Shore, Ohio, or Toledo, Ohio, 2.75 cents a barrel.

DEATHS

J. U. STAIR, vice president in general charge of Shell Oil Co., Inc.'s activities in Los Angeles, died last week in Pasadena, Calif. Born at Mazomanie, Wis., May 12, 1883, he moved to California when 20 and began as office boy with the Western Union Oil Co. at Santa Maria. He rose to superintendent in 1909, serving until his company was taken over by Union of Delaware in 1918. In 1919 he was made superintendent of the companies in California in the Union of Delaware group and later was made vice president in charge of production. When Union of Delaware was absorbed by Shell in 1922 he continued in charge of the Union of Delaware group until 1923, when he was appointed by Shell as superintendent of the Long Beach division during the early development of the Signal Hill, Santa Fe, Torrance-Redondo, and Dominguez Hill fields. In 1924 he was appointed assistant general field superintendent in Los Angeles, in 1926 general field superintendent, in 1928 production manager, in 1931 vice president in charge of production, and in 1938 vice president in general charge of Shell's operations at Los Angeles.

JOSEPH VERBAL DANIELS, 47, production superintendent for Gled Oil Co. of Tulsa, died October 25.

DR. H. A. HILL, 66, Amarillo, Tex., oil man, died last week. He removed to Amarillo in 1919 from Augusta, Kans., to enter the oil business with the late W. H. (Doc) Holmes.

JOSEPH D. PUGH, pioneer of the Turner Valley development and partner with the late William Livingston in the old Southern Alberta Oil Co., died at Vancouver recently.

H. H. (JACK) CHAMBERS, 47, western sales manager of Caterpillar Tractor Co., died at Peralta Hospital, Oakland, Calif., October 21, after a lingering illness. He joined Holt Manufacturing Co., "Caterpillar" predecessor at Peoria, Ill., in December 1914. As instructor at Camp Herring in 1918, he taught generals and enlisted men alike, the intricate details concerning the construction and maintenance of track-type tractors. After the war he was promoted to assistant service manager, and in 1921, became service engineer. In 1926 he was named sales manager of the western division.

Refiners Association Reports On Gulf Coast Stocks

HOUSTON, Tex., Oct. 31.—Unsold stocks, representing material on hand in excess of that already committed, held by the 10 member companies of the Gulf Coast Refiners Association for the week ended October 28, consisted of 174,015 bbl. of aviation gasoline, 808,458 bbl. of motor fuel, 95,343 bbl. of naphtha, of which 48,505 bbl. was high-blending stock, 1,176 bbl. of gas oil, 28,100 bbl. of Bunker C fuel, and 20,000 bbl. of kerosene.

These figures in comparison with the preceding week represented an increase of 19,285 bbl. of aviation gasoline, a decrease of 3,406 bbl. of motor fuel, a decrease of 6,410 bbl. in naphtha, a decrease of 8,824 bbl. of gas oil, an increase of 6,442 bbl. of Bunker C fuel. Crude runs to stills at all plants of member companies totaled 628,942 bbl. for the week, an increase of 52,110 bbl. over the preceding week and within about 73 per cent of capacity.

THE MARKETS*

CRUDE OIL: No price changes. Demand for Oklahoma crude has increased about 12,000 bbl. per day. What looked like a possible permanent decline in Illinois production was stopped by a 13,489-bbl. per day increase last week. An extra production holiday in Texas caused a drop of 263,713 bbl. in average daily production in that state. California production jumped 30,250 bbl. per day.

REFINERY: Less life displayed by general market, except in the case of wax and lubricants. Demand for wax is outstripping supply, with quotations mounting. Heavy industrial fuels in improved position. Gasoline fairly firm, except in Gulf Coast area. Furnace oils need stimulant of colder weather.

TANK WAGON AND POSTED DEALER: Consumer tank-car prices of gasoline advanced by Socony-Vacuum at most New York and New England points. Continental reduced dealer gasoline prices 1 cent in Oklahoma and advanced tank-wagon and dealer prices 1 cent in Boise, Idaho. Minor changes otherwise.

FINANCIAL: Oils drifted lower, in step with other issues, but did a little better than much of the general list at the close of the week. Average of 30 representative stocks for week ending October 28: High, 29.44; low, 28.37; close, 28.81. Week ending October 21: High, 29.78; low, 28.57; close, 29.14.

*Detailed information in market section.

International

Venezuela . .

Runs to Stills, Stocks and Exports in August

A DISPUTE between the Mene Grande Oil Co. and the Venezuelan Government over the attempt to levy port charges for exportation of oil through the company's pipe-line and shipping terminal at Guanta has not been settled and consequently no oil has been loaded so far.

The new 100-mile 16-in. line from the Oficina field to Guanta was completed last month, and shipments were scheduled to have started the last week in September. A tanker entered the port but was turned around and sailed elsewhere in ballast when an agreement could not be reached as to a fair charge for use of the port which was built entirely by Mene Grande Oil Co.

The seven operating refineries in Venezuela processed an average of 35,750 bbl. of oil daily in August. Nearly 60 per cent of the processed crude was handled through the San Lorenzo refinery of Caribbean Petroleum Co. The refineries and oil processed during August are shown below:

Companies—	Metric tons
Caribbean Petroleum Co.:	
Refineria de San Lorenzo	93,527.424
Mene Grande Oil Co., C.A.:	
Refineria de Cabimas	8,576.238
Compania de Petroleo Lago:	
Refineria de La Salina y La Arriaga	38,602.691
Colon Development Co., Ltd.:	
Refineria de El Cubo	1,747.600
British Controlled Oilfields, Ltd.:	
Refineria de El Mene de Mauroa	683.774
Standard Oil Co. of Venezuela:	
Refineria de Caripito	14,614.296
Mene Grande Oil Co., C.A.:	
Refineria de Oficina (Estado Anzoategui)	563.567
Total	158,315.590

Note: For approximate conversion, 7 U. S. bbl. equal 1 metric ton.

STOCKS OF CRUDE PETROLEUM BY COMPANIES ON AUGUST 31, 1939

Companies—	Metric tons
Caribbean Petroleum Co.	123,252.251
Venezuelan Oil Concessions, Ltd.	195,970.344
Colon Development Co., Ltd.	39,022.072
Lago Petroleum Corp.	263,543.471
Mene Grande Oil Co., C.A.	422,167.247
Standard Oil Co. of Venezuela	142,747.228
British Controlled Oilfields, Ltd.	6,413.063
Central Area Exploitation Co. (Venezuela), Ltd.	401.670
Orinoco Oil Co.	259.421
Total	1,193,776.767

EXPORTS OF PETROLEUM BY COMPANIES, AUGUST 1939

Companies—	Metric tons
Caribbean Petroleum Co.	103,801.247
Venezuelan Oil Concessions, Ltd.	770,038.771
Colon Development Co.	62,915.811
Lago Petroleum Corp.*	901,762.848
Mene Grande Oil Co.	339,714.846
British Controlled Oilfields, Ltd.	8,339.043
Standard Oil Co. of Venezuela	353,456.570
Total	2,540,029.136

*Includes 1,220.988 metric tons of natural gasoline.

Colombia . .

Petroleum Development Reviewed by Ministry

THE Petroleum Industry in Colombia," a brief historical account and outline of the present status of the industry, with an essay on the oil geology of the country and a resume of petroleum legislation, has been prepared by Felix Mendoza, petroleum engineer, University of Oklahoma, and Benjamin Alvarado, geologist, University of Minnesota, and published by the Ministry of National Economy, Petroleum Department, at Bogota. The 220-page booklet, magazine size, is printed in two sections, Spanish and English, deals extensively with the concessions, fields, production and refining practices in Colombia, and is illustrated with photographs, maps, and charts.

The Ministry of National Economy is headed by Jorge Gartner, minister, with J. V. Garces Navas and Francisco Ruiz A., secretaries. The personnel of the Petroleum Department consists of Gabriel E. Gomez, director; Luis Rafel Robles, legal section; Silvano E. Uribe, technical section; Carlos Guzman, fiscal section; Benjamin Alvarado, geological survey; Felix Mendoza, exploitation service; Eduardo Ospina Racines, petroleum engineer; Gabriel Cureva A., field inspector; Eduardo Segura, assistant engineer and Manuel Torres, secretary.

Mexico . .

W. R. Davis Firm Reports Oil Seizure by the British

TWO ships carrying $250,000 worth of American and Mexican oil have been seized by the British and their cargoes discharged in England. W. R. Davis & Co. reported in New York last week.

Henry W. Wilson, vice president, said they were the 9,957-ton Charles Racine, which sailed from Tampico August 21 and the Petter, 9,109 tons, which sailed from Houston, Tex., August 27. Both

Acme

W. R. DAVIS

ships were Norwegian and were bound for Malmo, Sweden. He said the Davis firm had not shipped any Mexican oil since war was declared. He added he had experienced difficulty getting details of the seizure and that he still did not know the fate of the vessels.

England . .

Petroleum Imports on the Eve of the War

PETROLEUM imports by Great Britain during August, the month before war was declared on Germany, increased to 8,898,057 bbl. a gain of 1,077,600 bbl. over the same month in 1938. For the first 8 months of 1939 Great Britain's petroleum imports totaled 66,327,030 bbl., an increase of 4.3 per cent, or 2,751,115 bbl.

Outstanding in Great Britain's imports of petroleum during the first 8 months of 1939 was the elevation of the United States to second position in the list of supplying countries, and the complete elimination of Mexico. British Board of Trade statistics, which are the basis of the report, do not recognize a few thousand barrels of asphalt imported from Mexico that are shown going to England in private reports. Through the first 8 months of this year the United States shipped 14,671,851 bbl. of petroleum to Great Britain, an increase of 4,006,851 bbl.

The Netherlands West Indies retained its first ranking as a supplier of Great Britain's petroleum requirements, but dropped to a total of 20,384,971 bbl. for the first 8 months, a decline of 2,858,543 bbl. compared to 1938 when shipments from that source totaled 23,243,514 bbl.

Other suppliers increasing their deliveries to Great Britain during the first 8 months of 1939 included Iran, British West Indies, Venezuela, and the group listed as "other foreign." In addition to the Netherland West Indies, lower 1939 shipments were reported from Iraq, Rumania, Russia, Peru, Netherland East Indies, Mexico, and "other British." The ranking of supplying countries is shown in the following table (figures in 1,000 Imperial gal.):

	Jan. to Aug.	
Supplying country—	1939	1938
Netherland West Indies	713,474	813,523
United States	513,515	373,276
Iran	394,455	392,930
British West Indies	201,032	121,859
Venezuela	161,279	96,213
Iraq	103,039	104,091
Rumania	47,512	62,764
U.S.S.R.	42,367	51,570
Peru	16,779	18,254
Netherland East Indies	15,500	15,825
Mexico		*59,393
Other British	13,345	32,233
Other foreign	99,149	83,226
Total	2,321,446	2,225,157

*January to April, 1938, only.
Note: 35 Imperial gal. constitute 1 U. S. bbl.

Peru . .

Refinery Construction Planned by Blue Goose

CONSTRUCTION of a 1,000-bbl. per day refinery in the Amazon basin of eastern Peru is planned by the Ganza Azul (Blue Goose) Petroleum Co., a California concern, which is actively exploiting a recently discovered field on the Pachitea River.

Erection of the refinery, announced in dispatches from Lima, Peru, last week, is to be undertaken to facilitate river and air transportation in the upper Amazon basin, a territory developed only slightly because of lack of modern transport.

Three producing wells have been completed by the Blue Goose company on its concession.

Pipe-Line Activity

Project for 162-Mile Gas Line That May Serve Winnipeg

CHATHAM, Ont., Oct. 30.—Walter F. Thorn, of Moose Jaw, Saskatchewan, head of Franco Oils, Ltd., associated with John K. Swanson, president and general manager of a gas-distributing subsidiary, Northern Natural Gas Co., is reported interested in an extensive natural-gas project which will involve construction of a 162-mile line at an estimated cost, with feeders, of $4,000,000. Mr. Swanson was for 10 years vice president and general manager of Minneapolis Gas Light Co. and formerly an official of Commonwealth Southern Gas Co.

The plan proposes to supply Saskatoon, a city of 45,000, and communities along the line, from the Lloydminster and Vermilion gas areas, and to contemplate ultimate extension to serve Moose Jaw and Regina, and possibly Winnipeg, Man. Details of the acreage will be found in the Canadian field report.

Construction Started on Nueces County Line

HOUSTON, Tex.—Southern Pipe Line Corp. has started construction of its 23-mile 6⅝-in. oil line from the Richard King field, western Nueces County, to the company's pump station near the Saxet field in the same county. Contract was let to Brown & Root.

Utah Line to Be Completed Ahead of Schedule

CASPER, Wyo.—It is reported the Utah Oil Refining Co. pipe line from Fort Laramie to Salt Lake City will be ready to run crude oil in a few weeks. Osage Construction Co., Casper, has completed Section 3, 73 miles from north and west of the old Simpson Ridge field to the Wamsutter pump station.

Osage also announced completion of 10 miles of 4-in. for Rocky Mountain Pipe Line Co. from its oil line from Lance Creek to Denver to the Fort Laramie station where it can connect either to the Utah Oil Refining line to Salt Lake City or Stanolind Pipe Line Co. oil line to Freeman, Mo.

Contractors are nearly finished laying the remaining six sections. It is expected the line will be completed about November 15, considerably ahead of schedule. Work has also been started on the lateral lines. Completion of the line will mark 1939's largest pipe-line project, and the laying of the first crude-oil carrier across the Continental Divide.

Line From the Voth Pool To Muenster Refinery

FORT WORTH, Tex.—A 3-in. line from the Muenster refinery to the Barney Voth lime pool just south of Muenster in northwest Cooke County is being laid to give the pool two outlets for oil, a line to the loading racks here previously having been laid by the Gainesville refinery. The Ellenburger area has 25 wells producing around 1,700 bbl. of oil daily.

F.P.C. Requests Data on Mesabi Pipe Line

WASHINGTON, D. C.—The Federal Power Commission has asked further details on petitions of two companies planning to pipe natural gas to consumers in five North Central states but ruled that the Kansas Pipe Line & Gas Co. and the North Dakota Consumers Gas Co. must submit actual commitments showing they were financially able to construct the lines and to serve the areas adequately.

The commission added it would grant certificates only if the companies made satisfactory showings. If they did, the commission might grant authority to the Kansas company to pipe gas from the Hugoton field in Southwest Kansas to points in Kansas, Nebraska, South Dakota, North Dakota, and Minnesota and grant authority to the North Dakota company to bring gas from Wyoming fields to consumers in western Minnesota and in North Dakota.

The Kansas company had applied to the Reconstruction Finance Corporation for a $21,470,000 loan to carry out its project and the North Dakota company had applied for $4,253,000.

The commission said that if the applicants were able to make further showing satisfactory to the commission on the financial matters, the commission would contemplate further action which might permit construction of facilities by the Kansas company from the Hugoton field to the Mesabi iron range in Minnesota. Also satisfactory showing by the North Dakota company might lead to authority for a line from a point connecting with the existing main lines of the Montana-Dakota Utility Co. at Mandan, N. D., east through Fargo, N. D., to Moorhead, Minn., southward from Fargo to Wahpeton, N. D., and Breckenridge and Fergus Falls; northward from Fargo to Grand Forks and East Grand Forks; and eastward from a point in Grand Forks County, North Dakota, to Crookston, Minn.

Commenting on objections by coal, labor, and railroad interests that the lines would adversely affect their business, the opinion said: "It would appear that Congress did not intend this commission generally to weigh the broad social and economic effects of the use of various fuels. Our duty is to safeguard the convenience and necessity of the public as it may be affected by proposed extensions or constructions of facilities for the transportation of natural gas to markets in which natural gas is already being served."

Wilbarger County Line Placed in Operation

FORT WORTH, Tex.—The new pool being developed by Consolidated Oil Corp. and Texas Eastern Oil Corp. in the eastern edge of Wilbarger County had its first pipe-line facilities October 28 when the Sinclair Prairie Pipe Line Co. hooked into the Consolidated wells on the W. T. Waggoner estate and the George B. Ancell ranch leases. The 4-mile line ties in with the main line in the western K.M.A. field in Wichita County.

Work Started on Gas Line To Jackson, Mississippi

SHREVEPORT, La.—A contract to United Gas Pipe Line Co. with Brown & Root, Inc., for a new pipeline system, on which work has been started, has been filed with the Webster Parish clerk of court. The contract calls for the construction of a pipe line through Webster and other Louisiana parishes, on to Jackson, Miss., for consideration of $1,002,452.

CROSSING A CREEK IN UTAH

Laying Utah Oil Refining Co. line between Fort Laramie, Wyo., and Salt Lake City, through Devil's Canyon, near Morgan, Utah

Refinery News

Pennant Completes Refinery Near Shreveport, Louisiana

SHREVEPORT, La.—Pennant Refining Corp. has announced the completion of its refinery at Princeton, La., and will process local Bellevue crude, supplying its plant through its own pipe-line system. The company will offer a full line of filtered, neutrals, and S.A.E. motor oils. The Pennant plant is situated 17 miles north of Shreveport.

B. H. Gray, well known in the Arkansas-Louisiana refinery circles, is president and owner. James B. Berry Sons will market the full line of products through its Chicago office.

Motor Fuel Corporation Names New Officers

FORT WORTH, Tex.—Motor Fuels Corp. has elected a new list of officers to conduct the operation and sale of petroleum products of its new 4,500-bbl. refinery at Levelland, Tex. The plant was placed in operation on July 11 and contains many unique features (see issue September 28, 1939, Page 46). The new officers include A. C. Mattei of San Francisco, president of Honolulu Oil Corp., who was named president. R. H. Hester, Levelland banker, and A. F. Bourdreaux of

Tulsa, sales manager of the Akin Gasoline Corp., were named vice presidents, and Ben S. Smith of the Honolulu company was named secretary and treasurer. These officers, with J. C. Halbert of Fort Worth, secretary-treasurer of the Mid-Continent Supply Co., were elected to the board.

American Locomotive Announces Revision in Refinery Work

NEW YORK.—Facilities for the manufacture, engineering and sale of heat-transfer equipment, pressure vessels, fabricated plate work and allied lines are to be expanded as occasion demands by American Locomotive Co. but, because of the demand for railway equipment and other products manufactured by it, the company is curtailing its activities in the processing and construction of complete refinery units. The effect of this program will be the greater concentration of work in the company's locomotive plants.

Standard Oil (Ky.) Starts Work on Biloxi Terminal

NEW ORLEANS, La.—Standard Oil of Kentucky has started work on a large terminal on the back bay of Biloxi, Miss., to supply South Mississippi with petroleum products, E. C. Watson, coast representative of the company, announces. Barges will bring the oil to Biloxi. The terminal will have a capacity of several million gallons. Bids will be opened on November 21 for construction of a dock and wharves which will be about 200 ft. long and along the bay. The project is expected to be completed about January 1.

Chemical Industries Exhibit

NEW YORK, Nov. 1.—This year's Chemical Industries Exposition will be the largest since 1930, according to indications based on space under contract. The seventeenth Exposition of Chemical Industries will be held at Grand Central Palace December 4 to 9.

Gray Process Case Ends

AMARILLO, Tex., Oct. 30.—By taking out a license to legally use the Gray process in refining and settlement out of court by Danciger Oil & Refining Co., the Gray Processing Corp. v. Danciger Oil & Refining Co. suit is now court history in the federal court here.

Natural Gas

Gas Customers Gain In First Eight Months

Customers served by manufactured and natural-gas utilities totaled 17,206,900 on August 31, an increase of 372,200 over the number reported on the same date a year ago, it was announced by Paul Ryan, chief statistician of the American Gas Association.

Revenues of manufactured and natural-gas utilities aggregated $551,321,500 for the first 8 months, an increase of 5.5 per cent over the corresponding period of 1938. Revenues from domestic customers gained 4.1 per cent, while revenues from industrial and commercial users rose 8.6 per cent.

Manufactured gas industry revenues totaled $245,117,100 for the 8 months, an increase of 2.4 per cent from a year ago. Revenues from commercial sales of manufactured gas gained 1.9 per cent, while industrial revenues were 11.9 per cent more than for the corresponding period of 1938. Revenues from domestic uses such as cooking, water heating, refrigeration, etc., were unchanged from a year ago.

Revenues of the natural-gas industry for the first 8 months aggregated $306,204,400, a gain of 8.1 per cent from a year ago. Revenues from industrial uses increased 11.6 per cent, while revenues from domestic uses rose 6.6 per cent.

During the 8 months ending August 31, some 123,997,200,000 cu. ft. of natural gas were used in generating electric power in public-utility steam plants throughout the country.

Natural Gasoline

MAKING FIELD TESTS—Included here are (top) Frank Wayman, H. L. Oder, Russell Clark, C. A. Mathey, R. D. Turner, Gwynne Felton, (front) Charles Lee and Raymond Lee, S. M. McAnnelly, and A. Lucas

Natural Gasoline Association Holds Tests in Field

Members of the gas-testing and measurement committee of the Natural Gasoline Association of America conducted a series of field tests during the past week in the vicinity of Pawhuska, Okla., according to R. D. Turner, Skelly Oil Co., chairman.

The purpose of the tests was to review under practical field conditions some proposed changes in testing natural gas by the compression and charcoal methods. methods to determine the natural-gasoline content of natural gas by the compression and charcoal methods. "These were but preliminary tests," said Mr. Turner, "and they will be continued later in another part of the country, probably in the East Texas area. Since the purchase of large volumes of gas is based upon these tests we are attempting to eliminate all possible sources of error in them and to assure duplicability under all conditions but considerable field data must be obtained before definite recommendations can be made."

Present for the 2-day test series were R. D. Turner and A. Lucas, Skelly; Jack Swab and Frank Wayman, Shell; Russell Clark and Gwynn Felton, Phillips; Charles Quast and Raymond Lee, Sinclair Prairie; S. M. McAnnelly, Lone Star; H. L. Oder, Cities Service; C. A. Mathey, Mathey Machine Works, and W. F. Lowe, secretary of the association.

Kettleman Hills Retains Wide Lead in California

Natural-gasoline production in the Kettleman Hills field of California continues to hold a wide margin of output over all other fields in the state according to the West Coast offices of the Bureau of Mines. The detailed report of the bureau, showing production and disposition of the material for the month of September appears below:

CALIFORNIA NATURAL GASOLINE PLANT OPERTIONS

(September)

	Natural gasoline produced (gallons)
San Joaquin Valley:	
Belridge	2,148,036
Elk Hills	125,324
Kettleman Hills	10,906,496
Midway-Sunset	1,809,533
Mountain View	353,145
Miscellaneous	675,141
Coastal district:	
Elwood	520,104
Rincon	190,021
Santa Maria	439,145
Ventura Avenue	4,991,509
Miscellaneous	483,114
Los Angeles Basin:	
Brea-Olinda-Coyote	1,336,794
Dominguez	2,144,622
El Segundo	139,051
Huntington Beach	2,690,315
Inglewood	344,026
Long Beach	7,390,311
Montebello	1,007,870
Richfield	576,269
Rosecrans	1,084,870
Santa Fe Springs	4,661,715
Seal Beach	573,232
Torrance	1,106,947
Miscellaneous	2,495,684
Total (all fields)	48,193,774

Distribution—(Gallons)

Stocks first of month	4,129,057	
Production during month	48,193,774	
Delivered to refineries		48,450,330
Delivered to jobbers, brokers, or blenders		230,086
Blended at plants to make motor fuels		10,075
Losses		112,275
Stocks end of month		3,520,065
Total	52,322,831	52,322,831

Liquefied petroleum gas production	2,592,557 gal. or 61,728 bbl.
Motor fuel produced	10,332 gal. or 246 bbl.

Liquefied Petroleum Gases—(Gallons)

Production:		
Number of producing companies, 14		
Stocks beginning of month		1,709,000
Production during month:		
At natural gas. plants	2,593,000	
At ref. from nat. gas	1,430,000	
At ref. from cracked gas	1,247,000	
Total production		5,270,000
Total		6,979,000
Consumption:		
Total demand		5,091,000
Losses		73,000
Stocks end of month		1,815,000
Total		6,979,000

To Build Gasoline Plant At Okemah, Oklahoma

A. M. Ballard, E. J. Cochrane, A. E. Ballin, and R. H. Bartlett of Tulsa, are building a natural gasoline plant in the Dill pool west of Okemah, Okla., which they expect to have running about the first of January. The plant will operate under the name of Balco Gasoline Corp.

Federal Power Commission To Investigate Rates

WASHINGTON, D. C.—An investigation to determine whether rates of the Cities Service Gas Co. for transportation and sale of natural gas were "unjust, unreasonable, unduly discriminatory or preferential" was announced by the Federal Power Commission. The commission said that after a hearing, it would determine and fix just and reasonable rates.

PROGRAMS AND MEETINGS

Mid-Continent Oil and Gas Association Meetings

The annual membership meeting and annual meeting of the executive committee of the Kansas-Oklahoma division, Mid-Continent Oil and Gas Association will be held Friday afternoon, November 3, at the Tulsa Club roof room, according to an announcement made by Robert S. Kerr, president. The membership meeting will open at 2 p.m. when the program and policies of the division for the ensuing association year will be discussed. The executive committee for 1940 will be selected. Reports of officers will be presented.

Officers will be selected at the meeting of the executive committee, following the membership meeting. Clarel B. Mapes is secretary of the division and of the general association. The general association's annual meeting is to be held at the same place at 11 a.m., December 18. J. S. Hunter, Abilene, is president.

The dinner meeting of the petroleum industry tax representatives (of the Kansas-Oklahoma area) will be held at 6:15 p.m., Friday, November 3, in the junior ballroom of the Mayo Hotel.

J. D. Carmichael, chairman of the Oklahoma Tax Commission, and C. O. Willson, editor of The Oil and Gas Journal, will address the meeting.

Petroleum Accountants Of Oklahoma

The monthly meeting of the Petroleum Accountants Association of Oklahoma in the Mayo Hotel, Tulsa, last week, was attended by 115 of the membership, representing 51 oil companies, in Tulsa, Ponca City, and Bartlesville. R. B. Hansen, newly elected president, presided.

Roger S. Randolph, tax attorney, addressed the meeting on the community property law and the intangibles tax act passed by the last session of the Oklahoma Legislature.

25-Year Club Train

NEW YORK, Oct. 31.—The 25-Year Club is sponsoring a special train over the New York Central system to the A.P.I. annual meeting in Chicago, November 13 to 16. The special will leave Grand Central Terminal in New York at 4:30 p.m. Sunday, November 12, and will arrive in Chicago at 8:30 a.m. November 13. Special arrangements and entertainment for eastern oil men traveling on the train are being arranged.

Southwestern A.P.I. District Meeting at Houston

The spring meeting of the southwestern district, A.P.I. Division of Production, will be held in Houston, Tex., March 28 and 29, in the Rice Hotel. The following program committee has been appointed: L. A. Ogden, chairman, Pure Oil Co.; S. E. Buckley, Humble Oil & Refining Co.; M. G. Cheney, Anzac Oil Corp.; R. O. Garrett, Arkansas Fuel Oil Co.; F. E. Heath, Sun Oil Co.; J. P. Straight, Cities Service Oil Co.; and Harold Vance, Texas A. & M. College.

Suggestions on authors and topics for discussion should be sent to Mr. Ogden, program committee chairman (care Pure Oil Co., Fort Worth, Tex.), or any member of the program committee.

Program for Pacific Section A.A.P.G. at Los Angeles

The annual meeting of the Pacific section of the American Association of Petroleum Geologists will be held at the Ambassador Hotel, Los Angeles, November 9 and 10. The officers of the Pacific section are: Past president, W. S. W. Kew, Standard Oil Co.; president, Roy M. Barnes, Continental Oil Co.; secretary-treasurer, H. D. Hobson, Continental Oil Co.; program committee, Albert Gregersen, Texas Co.; arrangements committee, E. J. Bartosh, Bankline Oil Co. District representatives are: E. J. Bartosh, Bankline Oil Co.; H. K. Armstrong, consultant; and H. L. Driver, Standard Oil Co.

Thursday, November 9

Morning session: Roy M. Barnes, presiding.
Luncheon, Cocoanut Grove.
Afternoon session: Albert Gregersen, presiding.
Evening session: W. D. Rankin, presiding.

Society of Economic Paleontologists to have dinner at 6 p.m. at the Clark Hotel; program 7:30 p.m.

Friday, November 10

Morning session: E. Wayne Galliher, presiding.
Afternoon session: Max L. Kreuger, presiding.
Evening, dinner dance, Fiesta Room, Ambassador Hotel.

Twelve papers will be rendered on subjects of interest to petroleum geologists and in addition there will be a symposium consisting of eight short papers on recent petroleum discoveries in California.

West Texas Geologists Plan Field Trips

Activities of the West Texas Geological Society, at Midland, Tex., were outlined by Berte R. Haigh, president, at the monthly meeting of the organization, which 60 members attended. In addition to the report by the president, a paper on Extrusive Igneous Rocks in the Big Bend District was read by Vaughan C. Maley, geologist.

Plans for the joint meeting with the Panhandle Geological Society and the geological department of Texas Tech were discussed, as were plans for a field trip in the central mineral region, the West Texas society having joined with the Forth Worth Geological Society in arranging the trip.

Industry Leaders to Honor Inventors and Researchers

Leaders in the petroleum industry and allied lines are among the members of the National Modern Pioneers Committee which has been appointed by Howard Coonley, chairman of the Walworth Co. and president of the National Association of Manufacturers, to sponsor a search for the nation's outstanding inventors and research workers to be honored in connection with the 150th anniversary of the American patent system.

Among the members of the committee of more than 80 leading industrialists are: K. S. Adams, president, Phillips Petroleum Co., Bartlesville, Okla.; W. G. Green, president, Engineering Laboratories, Inc., Tulsa; and C. M. Niezer, president, Tokheim Oil Tank & Pump Co., Fort Wayne, Ind.

Asphalt Institute

Announcement has been made of the new address in the Dwight Building in Kansas City, Mo., of the Asphalt Institute's field office for District 7. Frank S. Gilmore, formerly of the Kansas State Highway Department, continues in charge as district engineer, covering Missouri, Iowa, Kansas, and Nebraska.

CALENDAR OF EVENTS

November

SOCIETY OF AUTOMOTIVE ENGINEERS, fuels and lubricants meeting, Mayo Hotel, Tulsa, November 2-3.

AMERICAN PETROLEUM INSTITUTE, Division of Production, Illinois basin chapter, Masonic Temple, Salem, Ill., November 3.

NATIONAL MOTOR TRUCK SHOW, Navy pier, Chicago, November 8-16.

A.A.P.G., PACIFIC SECTION, fall meeting, Los Angeles. November 9-10.

GAS-LIFT CONFERENCE, at Texas A. & M. College, College Station, addressed by S. F. Shaw, November 9-11.

AMERICAN PETROLEUM INSTITUTE, twentieth annual meeting, Stevens Hotel, Chicago, November 13-17.

TWENTY-FIVE-YEAR CLUB OF PETROLEUM INDUSTRY, first annual meeting and dinner, Stevens Hotel, Chicago, November 14.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Providence, R. I., November 15-17.

CALIFORNIA NATURAL GASOLINE ASSOCIATION, annual fall meeting, Los Angeles, Calif., November 17.

December

WEST CENTRAL TEXAS OIL AND GAS ASSOCIATION, Abilene, Tex., December.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Philadelphia, Pa., December 4-7.

PETROLEUM ELECTRIC POWER ASSOCIATION, eleventh annual conference, Texas State Hotel, Houston, Tex., December 14-15.

January 1940

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting, Book-Cadillac Hotel, Detroit, Mich., January 15-19.

February

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, New York, February 12-15.

April

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, twenty-fifth annual meeting, Stevens Hotel, Chicago, April 10-12.

AMERICAN PETROLEUM INSTITUTE, eastern district, Division of Production, Columbus, Ohio., April 11-12.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Cleveland Hotel, Cleveland, Ohio, April 18-19.

May

NATURAL GASOLINE ASSOCIATION OF AMERICA, annual convention, Hotel Tulsa, Tulsa, May 15-17.

INTERNATIONAL PETROLEUM EXPOSITION, Tulsa, May 18-25.

Modern refining calls for much more than heating the crude and recovering the distilled fractions. Modern refining requires the maintenance of the most exacting heat and pressure balances. Piping arrangements such as the open pictured are being installed to effect this end. The photograph was taken at the Lubrite refinery of the Socony-Vacuum Oil Co., at East St. Louis just before insulation was applied to the maze of pipes serving the company's new Houdry catalytic cracking unit.

ENGINEERING & OPERATING

NOVEMBER 2, 1939

In This Section

COMPRESSION REQUIREMENTS FOR RECYCLING
By F. W. Laverty ..... Page 32

Recently developed practices in high-pressure gas fields of processing the gas through the retrograde condensation range to recover a distillate and then to return the residue to the producing horizons, involves boosting the residue gas pressure to something above the formation pressure. Such pressures commonly range up to 5,000 lb.

LIFTING EQUIPMENT ON INCREASE IN WEST TEXAS SAND AREAS
By D. H. Stormont ..... Page 34

USE OF GUM INHIBITORS IN REFINING MOTOR FUELS
By W. W. Scheumann ..... Page 41

The refining industry has been trying to build high-octane values into their motor fuels. The chemical treatment used to gain water-white color often acts to defeat this objective. The use of inhibitors which conserve the original octane value of the gasoline by eliminating oxidizing reactions during storage has become a common practice and here the author discusses the subject.

CONDITIONING WATER FOR USE IN OIL REFINING
By J. M. Augustus and D. S. Frank ..... Page 44

Large quantities of water are used by refineries for cooling and liquefying distilled vapors and for the generation of steam for use as power or processing. In areas where fresh water is available in large quantities, refiners often pump the water from a lake or river or even a bay and then after passing it through the refinery equipment return it to the original water supply. Where the water is not so plentiful, it is recirculated over cooling towers. Scale problems occur in both.

DIESEL-DRIVEN ARC WELDERS USED ON NORTHERN NATURAL ..... Page 36

HIGH-PRESSURE DEVELOPMENT IN THE BRADFORD FIELD ..... Page 50

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Compression Requirements . . . for Recycling

By F. W. LAVERTY
Director, Technical Service, Clark Brothers Co., Inc.

Fourth in series of five articles on the subject of processing high-pressure gas within the retrograde-condensation range. Others have appeared in the issues of October 5, Page 34; October 12, Page 48, and October 19, Page 48. The fifth and concluding article will appear in the issue of November 9.

THE economics of recycling projects, to a large extent, depend upon the cost of recompressing the excess gas and returning it to the formation. This in turn is determined by the power required and its cost.

The horsepower required to compress the gas depends chiefly on three factors:

1. Volume of gas to be handled.
2. Suction pressure to the compressor.
3. Discharge pressure to the compressor.

The volume to be handled is a function of field conditions, including the ability of the reservoir to produce and return the gas. This can only be determined by field tests and the resulting economic situation.

The suction pressure is usually determined by the recovery process and this pressure is the one at which it will recover the maximum of marketable product.

The discharge pressure is determined by the pressure in the sand and the friction losses between the compressor and the sand. For average conditions this is rock pressure plus 100 lb.

The properties of the gas to be handled determine the horsepower required to a limited extent. The ratio of specific heats and the deviation of the gas from the perfect gas laws are the two most important. The gas returned to the reservoir, in most recycling projects, has a relatively narrow range of composition. The methane content ranges from 80 to 93 per cent and is, therefore, the predominate factor. The molecular weight is usually between 17 and 20.

These facts simplify the general picture, as gases of this composition have a narrow range of ratio of specific heats under normal conditions. The ratio for these gases is between 1.3 and 1.26.

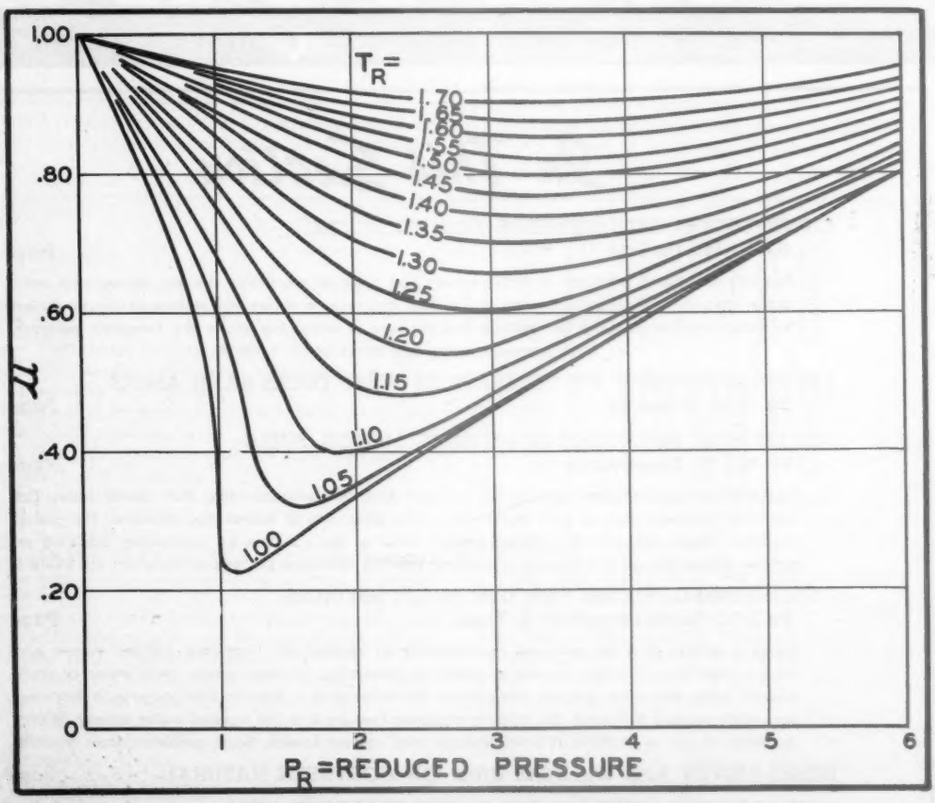


Fig. 1—General curve for supercompressibility

The ratio of specific heats will increase as the gas deviates from the perfect gas laws. The ratio of specific heats (K) will vary during the compression stroke. This variation is subject to much discussion but, at the pressures in use at the present time, experience shows this effect is negligible, as it is offset by the cooling effect of the water jackets; and because at low ratios of compression, a wide variation in the K value of the gas will not serious effect the brake horsepower required.

The effect of variation in the ratio of specific heats of the gas during compression can be shown by the effect on the theoretical horsepower required to compress a gas.

The theoretical horsepower required to compress 1,000,000 cu. ft. of gas per 24 hours is given by the formula:

$$\text{Horsepower} = 3.03\, Po \frac{K}{K-1}\left(\frac{P_2^{(K-1)/K}}{P_1} - 1\right)$$

Where:

Po = pressure measurement base = 14.4 lb. per sq. in. abs.
K = ratio of specific heats
P_2 = discharge pressure, absolute
P_1 = suction pressure, absolute

For a given case, assume a suction pressure of 1,200 lb. gage and a discharge pressure of 2,415 lb. gage, which would give a ratio of compression of 2. Incidentally, these pressures will fit a number of distillate projects now in operation.

Normal K would be 1.28 and may be calculated as high as 1.36 at some points during compression. With this variation, the horsepower per million would be:

K	Hp. per million
1.28	32.7
1.36	33.3

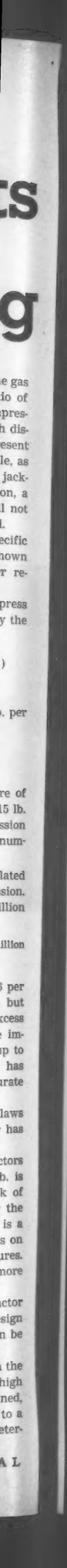
This provides a difference of slightly over 1.6 per cent. Obviously, the possible error is small, but it should be noted that, at pressures in excess of 6,000 lb., the difference will become more important. At the present time, for pressures up to 4,000 lb. in average recycling operations it has been found that a K value of 1.3 will be accurate within the limits of engineering practice.

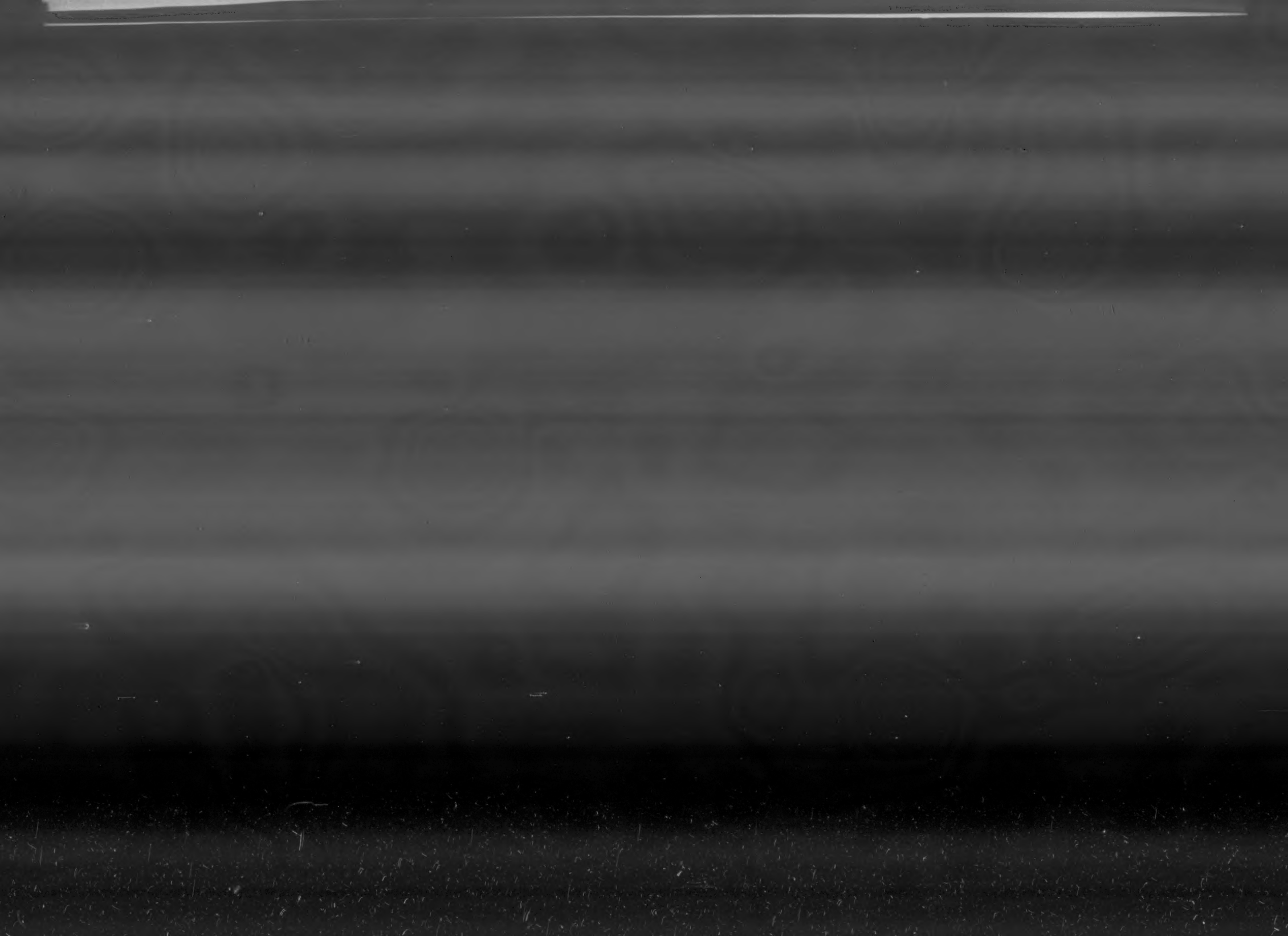
The effect of deviation from the perfect gas laws on the capacity or volume of the compressor has a larger and more important magnitude.

At the present time, the use of deviation factors in gas measurement at pressures over 800 lb. is not widely used. This is because of the lack of data on the subject. Methods for estimating the amount of deviation are available, but there is a decided lack of actual deviation measurements on gases of different compositions at high pressures. The use of correction factors will not become more general until more test data are available.

There is one very good reason why this factor has not been too seriously considered in the design of recycling plants and that is that its use can be avoided by test procedure.

If a test on a distillate well is conducted with the measurement of the residue gas made at high pressure, the volume at this pressure is determined, making it unnecessary to correct this volume to a basic pressure. If the fluid per 1,000 cu. ft. is deter-





mined by the high-pressure measurements, then the final plant should give the same results. By the same token, the compressor capacity can be designed on this basis, making correction factors throughout unnecessary, as the final result would be the same in any case. This is not a very scientific method of designing a recycling plant, but the method is very practical.

The method most generally used to calculate the deviation from the perfect gas laws is that proposed by Cope, Lewis, and Weber[3] and Lewis and Luke[5] based on the laws of corresponding states. They found that by the use of reduced critical conditions that the properties of the hydrocarbon gases over a wide range of conditions could be estimated. Fig. 1 is their generalized curve based on data available.

To utilize this curve, it is necessary to know the critical pressure and temperature of the gas. Very little is known about the criticals of mixtures of hydrocarbon vapors, but Kay[4] has found that the properties can be estimated by a method wherein he uses a pseudocritical relationship.

The pseudocritical of a gas can be calculated from the mol fractions and actual critical constants of the pure compounds. The method of computing would be as follows, assuming the fractional analysis of a stripped gas returning to the formation would be:

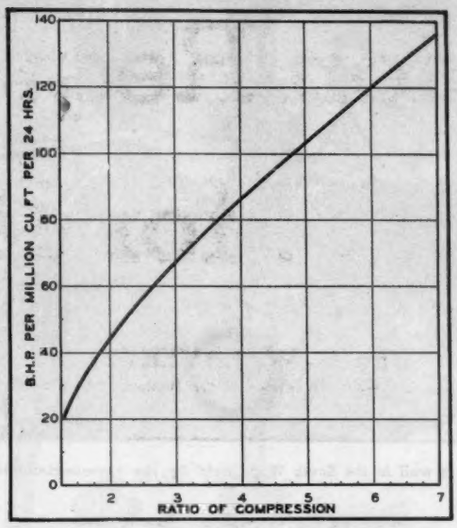


Fig. 2—Gas-engine drive. Brake horsepower per million cubic feet per 24 hours. Operating on average stripped distillate gas.

$$\text{where } R = \frac{\text{discharge pressure, abs.}}{\text{suction pressure, abs.}}$$

	Mol per cent	Critical Temp. abs. (°F.)	Critical Pres. abs. (lb./sq. in.)	Pseudocritical Pres. abs. (lb./sq. in.)	Pseudocritical Temp. abs. (°F.)
Methane	92.0	344	673	618.0	316.0
Ethane	4.3	550	709	30.5	23.6
Propane	2.2	664	632	13.9	14.6
Butane	1.1	767	529	5.8	8.5
Pentane	0.3	847	484	1.4	2.5
Hexane plus	0.1	914	435	0.4	0.9
	100.0			670.0	366.1

Pseudocritical pressure absolute = 670 lb. per sq. in.

Pseudocritical temperature = 366° F. abs.

$$P_r = \frac{\text{Operating pressure absolute}}{\text{Pseudocritical pressure absolute}}$$

$$T_r = \frac{\text{Operating temperature absolute}}{\text{Pseudocritical temperature absolute}}$$

By obtaining the values of P_r and T_r, the supercompressibility factor can be picked from the general curve.

For the above gas, a few points have been computed as follows:

	U 100° F.	U 60° F.
800 lb. abs.	0.917	0.875
1,600 lb. abs.	0.83	0.77
2,400 lb. abs.	0.81	0.75

Superexpansibility, which is the reciprocal ($1/U$) of the supercompressibility factor, would be as follows:

	$1/U$ 100° F.	$1/U$ 60° F.
800 lb. abs.	1.09	1.14
1,600 lb. abs.	1.202	1.30
2,400 lb. abs.	1.235	1.33

By crossplotting the experimental data of Kvalnes and Gaddy[6] on methane, a check on the accuracy of this method can be obtained.

Superexpansibility Factor

	Pseudocritical method $1/U$	Kvalnes and Gaddy method $1/U$
At 100° F.:		
800 lb.	1.085	1.08
1,600 lb.	1.13	1.143
2,400 lb.	1.15	1.175
At 60° F.:		
800 lb.	1.105	1.10
1,600 lb.	1.205	1.22
2,400 lb.	1.29	1.265

This shows a reasonably close consistency in this method of computing deviations at high pressures.

It should be cautioned that the pseudocritical method may give misleading results if used in the two-phase region where both gas and liquid are present, as very little information is available in this state.

How does deviation effect the horsepower required? It chiefly effects the suction stroke of the compressor. With a given cylinder size, the compressor will aspirate a given quantity of gas per stroke. It has no way of correcting for the deviation of the gas laws and, if the gas is more dense, it is compressed with no increase in horsepower.

Density has no effect on the horsepower required. The theoretical horsepower formula illustrates this, as it shows no factor where density corrections are required. Density can only affect the horsepower in the manner that it affects the value of K, which, as illustrated previously, will not introduce serious errors.

This can be illustrated by noting that at a ratio of compression of 5 the difference in brake horsepower required to compress methane and propane:

Gas—	Sp. gr.	Mol. wt.	B.hp. per million
Methane	0.6	16	104
Propane	1.51	44	96

Method of Calculating Brake Horsepower

The attached curve, Fig. 2, is general, showing the brake horsepower required per million cubic feet per day of gas being handled. This gas is measured at 14.4 lb. abs. pressure and suction temperature. If the gas quantities are given at 60° F., then the volume must be corrected to the suction temperature of the compressor to determine the horsepower. If the gas is measured at suction conditions to the compressor without any allowance being made for deviation, then the compressor horsepower requirements can be read directly from the above chart, multiplying by the number of million feet being handled. If the gas deviates and if this deviation is taken into consideration in computing the volume to be handled and, for example, assuming the compressibility factor of this to be 0.83, then divide the capacity or volume by 0.83.

For example, assume the following conditions:

Suction pressure = 1,200 lb. abs.
Discharge pressure = 3,000 lb. abs.
Gas volume = 55,000,000 cu. ft. per day measured at 14.4 lb. and 60° F.
Suction temperature = 100° F.
Supercompressibility factor used in above measurement = 0.88.*

From the attached curve No. 3, 1,200-lb. suction, 3,000-lb. discharge, shows 56.5 b.hp. per million required. The same result can be obtained from curve No. 3 by obtaining the ratio of compression, which would be 3,000/1,200 = 2.5; with R equal to 2.5, the brake horsepower per million is 56.5.

To obtain the correct capacity:

$$55{,}000{,}000 \frac{560}{520} 0.88 = 52{,}200{,}000 \text{ cu. ft. per day}$$

Then the brake horsepower = 56.5 · 52.2 = 2,950.

If no deviation figure is used, then:

$$\text{Volume} = 55{,}000{,}000 \frac{560}{520} = 59{,}200{,}000 \text{ cu. ft. per day}$$

Brake horsepower required = 56.5 · 59.2 = 3,340 b.hp.

(Continued on Page 54)

*Gas measured at 1,200 lb. and 100° F. and corrected by above factor to standard conditions.

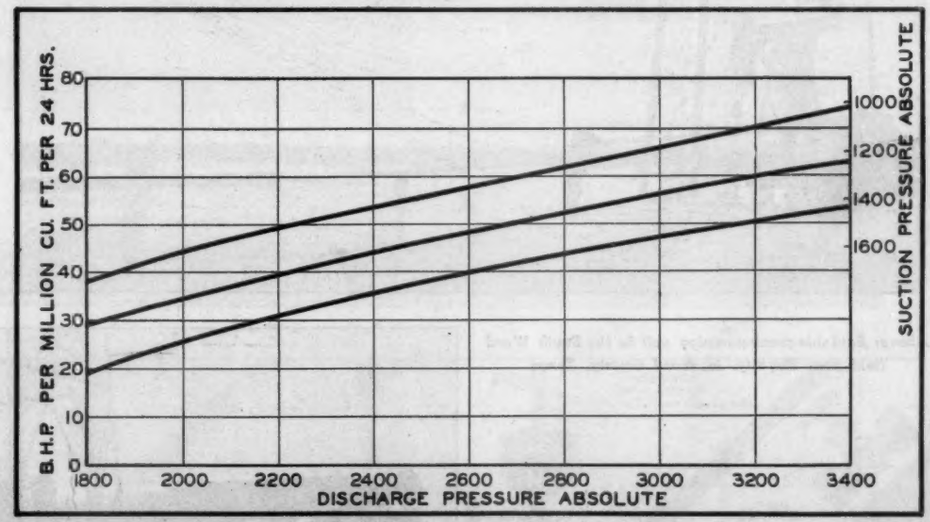


Fig. 3—Brake horsepower required to compress 1,000,000 cu. ft. of gas per 24 hours at pressures usually encountered in distillate recovery processes. Basis 14.4 lb. abs. and suction temperature

Cleaning out a well in the South Ward field by the reverse-circulation process

Lifting Equipment on Increase in West Texas Sand Areas

By D. H. STORMONT

IN the sand areas of Ward and Winkler counties, West Texas, cleanout work and installation of lifting equipment has shown a decided increase in recent months. Bottom-hole pressures in many of these fields, several of which are only 3 or 4 years old, are rapidly declining so that many wells have difficulty in flowing their daily allowables. A majority of these wells were completed with 100 to 300 ft. of open hole and were given heavy shots upon completion; thus the declining reservoir pressures and fluid levels are causing considerable sloughing of sand.

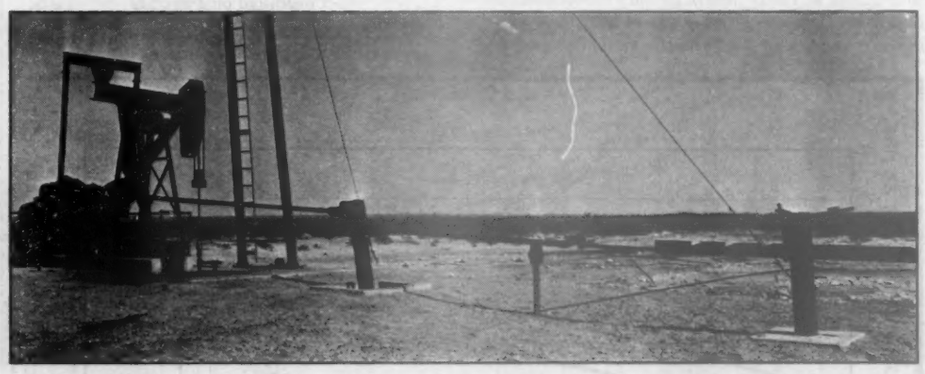
Most of the present work is taking place in these two counties and centering around the Kermit area, but considerable cleaning out and installation of pumping units is also being done in some of the older fields of the south basin. Several companies are attempting to postpone this work until after the first of next year, but in any event, when the current program is completed a great percentage of the remaining flowing wells in these two counties will have been placed on the pump or gas lift. Or, operators will have resorted to repressuring operations in an effort to prolong the flowing life of their production.

There were 1,790 producers in Winkler County at the first of this year, of which 1,250 were flowing, 441 pumping and 99 being produced by miscellaneous methods. In Ward County there were 1,371 producers, of which 856 were flowing, 320 pumping and 195 being produced by various other methods, mostly gas lift. Of those wells being pumped in these two counties over 700 of the total of 761, or all but some 7 per cent, were located in fields over 9 years of age. The 2,100 flowing wells were in fields from 3 to 12 years old, practically all of which had been developed on a 10-acre spacing, and since many are nearing the end of their flowing life, artificial-lift methods must be applied.

A majority of the wells producing from sand pays in this area have somewhat similar well characteristics and are facing similar lifting problems. These wells range in depth from 2,600 to 3,100 ft. and initial pressures of the reservoirs approximated 1,300 to 1,400 lb. In completing, the casing was set at the top of the pay and from 100 to 300 ft. of broken-sand pay drilled, after which shots of 400 to 600 qt. of nitroglycerin usually were used in order to secure high potentials.

During their flowing life, fluid levels declined and reservoir pressures in some instances fell as low as 150 lb. so that the exposed formations have caved, thereby causing cleanout work and floating sand troubles. Since fluid levels and bottom-hole pressures have declined more rapidly than the gas volume, in some instances large volumes of gas have to be handled while the well is pumping. Also, there is the problem of sand sloughing and clogging the pumping equipment as the wells attempt to flow immediately after they are placed on the pump.

Preparatory to placing the wells on the pump, liners are usually pulled and the shot hole thoroughly cleaned to bottom with portable cleanout machines. Some operators are using the Beckman



Above: Backside-crank-pumping unit in the South Ward field near Royalty, in Ward County, Texas

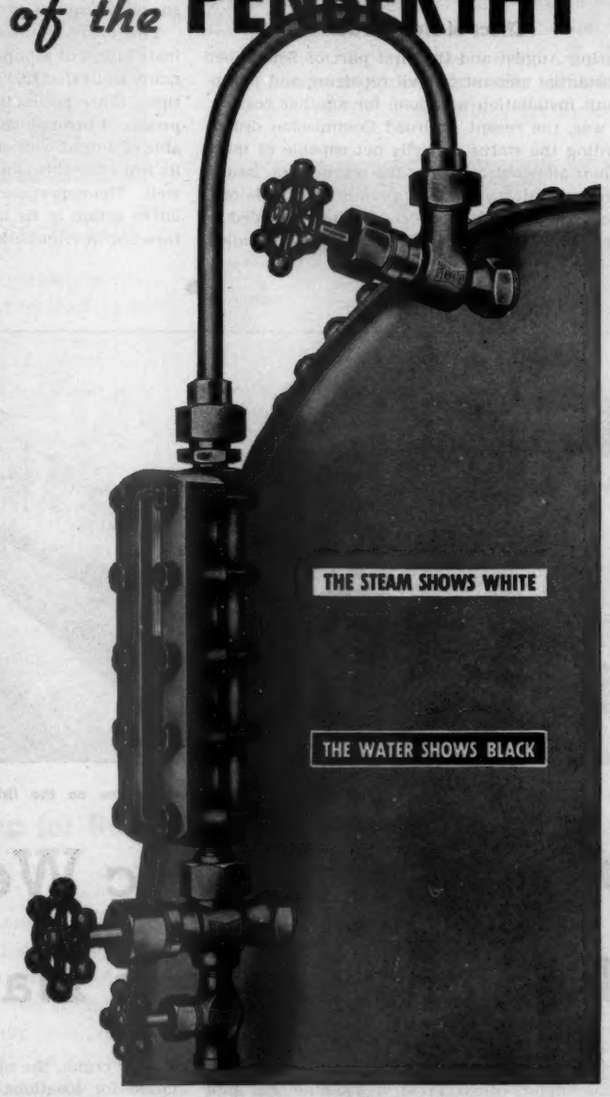
Right: Cleaning out a well in the Harper field of Ector County, Texas, with a portable clean-out machine preparatory to placing it on a pump

SIMPLICITY

the outstanding feature

of the **PENBERTHY REFLEX GAGE**

(Licensed under Jerguson Patent)



● "It is the most simple gage to service that I have ever seen." This statement is typical of the remarks made throughout the oil fields since the Penberthy Reflex Gage was introduced.

Note particularly the U-Bolt type of construction that is the strongest and the simplest to service. To replace a glass, simply remove the nuts on the face of the gage . . . it is unnecessary to work between the gage and the boiler.

The Penberthy Reflex Gage shown here is available in both Navy Bronze and Malleable Iron; it is recommended for working pressures to 350 lbs. at 450° F. Gage is furnished complete with Penberthy "Dripless" Drain Cock shown.

Other Penberthy Reflex Gages are made in any length desired for higher pressures and for various kinds of liquids. Any leading oil well supply distributor will be pleased to quote upon your particular requirements.

Automatic Injector
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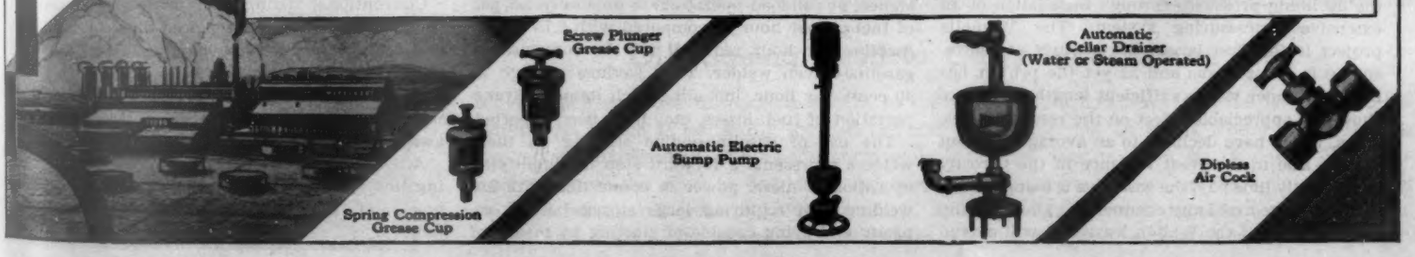

Screw Plunger Grease Cup
Spring Compression Grease Cup
Automatic Electric Sump Pump
Automatic Cellar Drainer (Water or Steam Operated)
Dipless Air Cock

process of reverse circulation to clean out the cavings, but in wells with very low bottom-hole pressures this has not proved practical due to the weight of the fluid column being higher than the bottom-hole pressure. Thus oil is lost from the hole to the pay. On wells with sufficiently high pressures, the reverse-circulation process has been found to give better cleanout results at less cost and time. In using conventional cleanout machines, one company has found from experience that the time and cost of the work could be materially reduced if as little water as possible is used in the procedure. This is due to the water causing the bentonitic pay formations to cave.

In the South Ward field some operators in preparing to install pumping equipment, after pulling liner and cleaning out the shot hole, place the upper pay zone behind a blank liner, thereby eliminating the believed-worst source of floating sand. Others leave the liner in place, clean the hole to bottom and then perforate the liner with new holes in an effort to increase productivity of their wells. All operators, however, did not shoot their wells upon completion, so that work prior to placing the wells on pump is materially reduced.

To do away with the problems incident to floating sand in pumping, or for other reasons inherent in the method, operators are increasingly adopting gas lift. The large gas reserves of the Permian basin make such installations highly feasible, and as a result several hundred wells in West Texas are now produced by gas lift, with most of the installations being in Ward and Winkler counties. On wells that have just ceased natural flow, gas lift is being carried out at high efficiency. It is also being used successfully to produce wells of low fluid levels and bottom-hole pressures, but it remains to be seen whether gas lift will produce this type of West Texas well to economic depletion. In South Ward and Kermit, gas lifting of low-fluid-level wells is being increasingly adopted.

Individual Pumping Units

Individual pumping units driven by multiple-cylinder gas engines and geared units equipped for backside cranking are being used most extensively as surface equipment. Metal-to-metal insert liner pumps, equipped with special open-end gas traps, have proven highly successful for combating gas and the abrasive action of the fine floating sand. Due to the fine texture of the sand, operators have found that by adjusting the clearance between the plunger and liners to a fit of minus 0.001 in., wear on the working parts is greatly reduced. Also, use of hard liners and balls and seats has been found an aid in combating the sand.

It has been the experience of some operators that the floating sand and gas problems could be reduced by use of small-size pumps, thereby maintaining a slow fluid movement which tends to keep the gas from coming out of solution. Suitable gas anchors, placed at the right depth, have also been found to be an important factor in reducing pumping problems.

In the Kermit area, where some 700 wells are still being produced by natural flow, rapidly declining reservoir pressures are creating a major lifting problem. On its Walton lease in the northern end of the field, Magnolia Petroleum Co. is meeting the declining pressures through installation of an extensive repressuring system. The Magnolia project is the first large-scale attempt at repressuring in West Texas and as yet the project has not been under way a sufficient length of time to show any appreciable effect on the reservoir pressures, which have declined to an average of about 600 lb. Due to the great variance in the porosity of the sandy lime pay, the gas drive is being started very slowly to avoid any channeling. The company has 232 wells of the Walton lease and will extend the project to its leases in the Scarborough and Keystone-Colby fields.

No other companies have announced plans for resorting to repressuring operations as an effort to maintain the flowing life of their production. The Magnolia project, however, is being closely watched and if it gives the desired result probably other projects will be started. The large ranches on which many of these sand fields are located and the large size of the leases tends to make repressuring very feasible as it can be applied on a large scale and oil and gas drainage is less of a problem.

Effect of New Order

During August and the first part of September a substantial amount of well repairing and pumping-unit installation was done for another reason; that was, the recent Railroad Commission orders regarding the status of wells not capable of making their allowable. In July the commission issued an order requiring that all operators in fields outside of East Texas, by August 15 (later extended to September 15), file with the commission detailed data on the status of wells making water, pumping wells, those using air or gas lift, and those incapable of making their allowable.

Also included in the information requested was that relative to the top of the sand or producing horizon and the total depth of each well; the status of each well as to whether it was flowing, pumping, on air lift, on gas lift or dead; the current allowable of the well; and the average daily production of oil and water in barrels; the per cent of water, together with a statement as to whether or not the well was currently making its allowable. This information was certified correct by the person in charge of production.

This order resulted in the cleaning out, and the installation of pumping equipment if necessary, of many wells that had needed such handling for some time. Since production in West Texas is generally produced through central tank batteries, the allowable of a dead well or a well not capable of making its full allowable can easily be produced by another well. The commission order, resulting from legislative action in its last session, was a great stride forward in eliminating this practice.

Arc welder equipped with diesel engine on the firing line

Diesel-Driven Arc Welders Used on Northern Natural

THE Northern Natural Gas Co., Omaha, Neb., has under construction a 235-mile gas pipe line from Dakota City, Neb., into Minnesota.

The new pipe line is being constructed of 16-in.-diameter pipe and represents one of the first instances in which the new diesel-engine-driven arc welder, recently placed on the market by Lincoln Electric Co., has been used.

With its four-cylinder diesel engine, the pipeline welder cuts fuel costs 33 to 86 per cent, depending upon the price of fuel oil used. For instance, at full-load operation, it uses only 1.5 gal. of fuel oil per hour as compared with 2.75 gal. of gasoline per hour required for the conventional gasoline-driven welder. Total savings as high as 40 cents per hour, including such items as transportation of fuel, losses, etc., have been reported.

The use of gasoline-engine starting on these welders represents a forward step in simplifying operation of diesel power in connection with arc welding. Not requiring large storage-battery capacity and being capable of starting by means of a hand crank, the new welder is a dependable machine for locations where electric power is not available. Starting the diesel is further simplified by having the cooling system of the starting engine as well as the diesel engine connected together. This feature facilitates starting in extremely cold weather. Running the starting engine "warms up" the diesel.

The generator end of this diesel-driven welder is the standard "Shield-Arc" unit equipped with the Lincoln dual continuous control.

Conventional "firing line" procedure is used in construction. The pipe is placed on skids and several lengths tack-welded together. After tacking, the section is turned by helpers while an arc-welding operator welds the joint. The joint is welded in two beads, care being taken to clean away all slag between beads.

After a section of pipe is completed on the "firing line" it is tied into the line proper by a bell-hole joint. This joint is made with the pipe stationary.

Operating Ideas

Steel Cofferdam Protects Site

Occasional torrents, sweeping down a normally dry gulley adjacent to a well site, carried driftwood which menaced well connections. The usual earthen dike was unsatisfactory. It was replaced by a steel cofferdam constructed from old tank sheets and scrap 2-in. pipe; braced with pipe and stakes. This steel shield is sturdy enough to withstand the pounding of flood-borne driftwood, yet it does not restrict the channel in the way that a dike would. Backwater can flood the well site temporarily without damage behind the cofferdam. Restoring the well site to its former orderliness after a freshet simply requires wiping mud stains from the well-head connections. This is in marked contrast to the removal of debris necessary after an earthen dam has been spread over the site.

Crosshead and Ramp for Rod-Line Pump

Rod-line pumps are used frequently in locations where backcrank can be attached to the pump yoke. It has been found that operating conditions can be improved by installing a ramp and rollers. The ramp was placed so that it would be parallel to the plane of yoke travel; rollers bear against the ramp surfaces and support the rod. The wrist pin between the rod and the yoke is extended so as to act as axle for each of the rollers; grease cups are provided for lubrication.

Illumination for Gager's Equipment

A pipe-line company has improved the working conditions of gagers whose duties require that they be in the field at night. A dome light has been placed under the turtle back of the gager's car. The walls of the enclosure

under the turtle back have been sprayed with aluminum paint. A false floor has been installed, in the enclosure, which has been made with recesses for holding various pieces of equipment. A hinged cover has been made with a sloping top to enclose the space, under the false floor, which is convenient for the storage of small articles.

Oil Drums for Water Reservoir

Six drums have been placed in the form of a pyramid and connected to serve as a 300-gal. reservoir. No welding has been used to hold them together; it is possible to remove a leaky drum and replace it with a tight drum

without affecting the other drums. Pipe connections provide for the flow of water from the upper drums to those immediately below. Pipe connections are made with swings, strain on the piping, due to settling of the drums while they are being filled, therefore, is not transmitted to the metal of the drum heads and longer use is thereby provided.

Old Casing Used to Carry Mud Across Pit

Most rotary rigs use a wooden trough to carry the circulating fluid from the flow line to the settling pit which is generally located beyond the suction pit. In areas where "hurry up" is the main consideration due to the shallow holes, other means must be devised. This contractor allows the mud to flow from the casing into a ditch and for crossing the suction pit he installed an old joint of 12¼-in. casing. It has a distinct advantage in that it can withstand the rigors of moving and will not sag and leak with use.

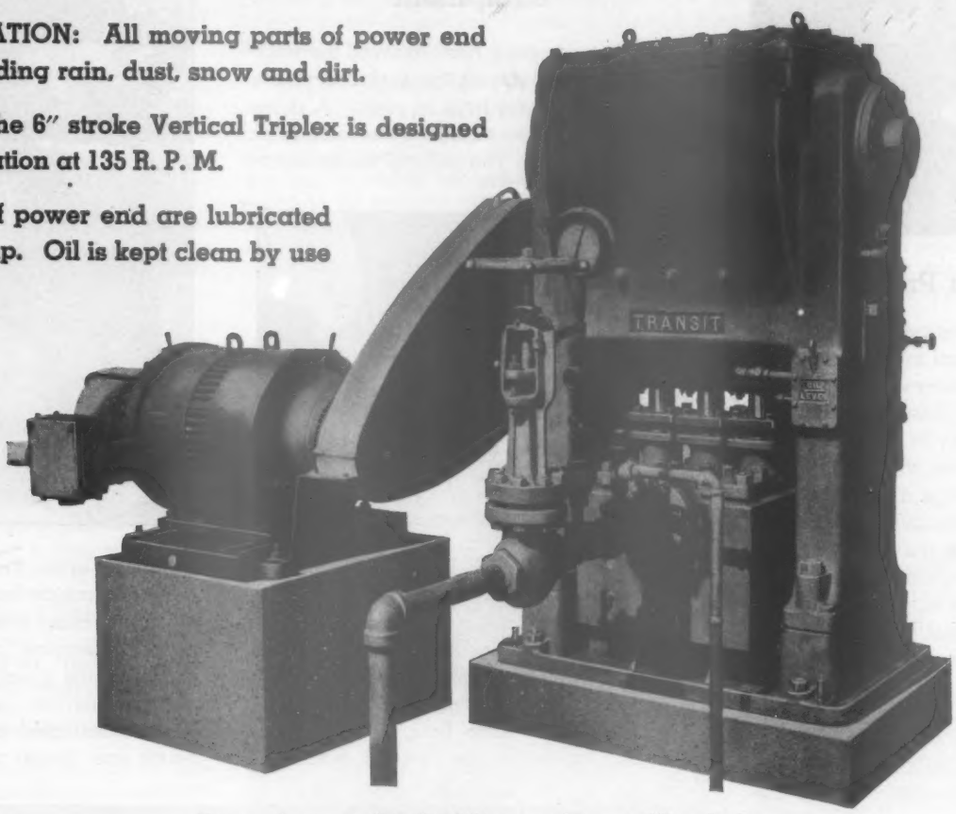
Announcing:

TRANSIT'S *NEW* ENCLOSED VERTICAL TRIPLEX

OUTSIDE INSTALLATION: All moving parts of power end are sealed in, excluding rain, dust, snow and dirt.

HIGHER SPEED: The 6″ stroke Vertical Triplex is designed for continuous operation at 135 R. P. M.

All working parts of power end are lubricated by attached oil pump. Oil is kept clean by use of a pressure filter.



Pump shown is fitted with extra deep stuffing boxes for handling volatile liquids.

Frame. One piece, cast iron box section with integral enclosures for crankshaft and gears, and oil reservoir.

Main and Pinion Shaft Bearings. Spherical, self-aligning type mounted in bearing housings separate from frame. Crankshaft can be removed without removing bearing housings from frame. Pinion, pinion shaft, bearings and bearing housings are removed or replaced as a unit.

Gear and Pinion. Main gear is a one-piece semi-steel casting bolted to crankshaft disc. Pinion, a steel forging, heat treated. Both are continuous tooth herringbone type; ratios from 5:1 to 2½ to 1.

Right and left hand. Because the pinion shaft is located on the vertical center line of the symmetrical frame, these frames can be turned around to make either a right hand or left hand pump. The driver can be arranged so that the rotation of the pinion shaft is either way; and the liquid end may be reversed to bring the suction on either side.

Liquid End. Pump with forged steel cylinders and extra deep stuffing boxes is illustrated. Cast iron or cast steel liquid end can be furnished.

Complete information on request.

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Use of Gum Inhibitors in Refining of Motor Fuels

By W. W. SCHEUMANN
Cities Service Oil Co.

THE production of satisfactory motor fuels by cracking heavy or intermediate petroleum fractions, reforming straightrun naphthas, and thermal or catalytic polymerization of gaseous hydrocarbons includes among other manufacturing requirements that the products receive a chemical treatment. This chemical treatment may conveniently be divided into two types, the first of which is a stabilizing treatment to insure against gum formation and loss of antiknock value and color in storage. The necessity for this treatment is due to the fact that the raw products from cracking, reforming and polymerization are very susceptible to deterioration when stored in contact with air. This deterioration is primarily an oxidation of unsaturated constituents to form peroxides, aldehydes, and acidic bodies, which finally through polymerization result in gums and resins.[1] Unsaturated compounds containing conjugated double bonds are the most reactive in this respect, but over long periods even simple olefins undergo this type of oxidation. In addition to the formation of gum, a loss of antiknock value takes place, due apparently to the effect of the peroxides which have been formed during the oxidation. A third change resulting from this deterioration is a gradual darkening of color. Apparently this is due in part to oxidation although sulfur and sulfur compounds present in the gasoline enter into the reaction and exert an accelerating influence.[2]

Sweetening to Meet Demands

The second type of chemical treatment is for sweetening to meet marketing demands for a doctor-sweet product of acceptable odor. Essentially this treatment consists in removing hydrogen sulfide and either removing the mercaptan sulfur compounds or converting them to the corresponding disulfides, whose ethereal odor is usually considered more pleasant than that of the mercaptans.

In instances where high sulfur stocks are being processed, chemical treatment may also be required to reduce the sulfur content of the product to satisfactory limits. However, this reduction of sulfur is usually accomplished simultaneously with, or as an integral part of the previously mentioned types of treatment.

Various methods for treating gasolines of the types previously mentioned are being used by the industry today in order to secure satisfactory stability. The oldest method and the one still most widely used is sulfuric acid treatment. This process consists of contacting the naphtha or benzine with sulfuric acid, settling and drawing off the acid sludge, washing the naphtha with water, and contacting the naphtha with either caustic soda or sodium plumbite (doctor) solution. Following this the treated naphtha is redistilled in order to recover the gasoline of desired boiling range. With proper choice and control of the ratio between acid and oil, the acid concentration, treating temperature, degree and time of contact, thoroughness of sludge removal, thoroughness of water wash and neutralizing treatment, and temperature and degree of fractionation in the redistillation operation, this process will yield products having a good color and storage stability and which are satisfactory in every respect. However, this process is expensive and wasteful because of the loss which takes place, due to the solution of hydrocarbons in the acid, the polymerization of unsaturated compounds to high-boiling materials, and the loss incurred in redistillation. In addition to this physical loss, the hydrocarbon constituents removed are of high antiknock value and the loss of octane number caused by this refining treatment must be compensated for by the use of additional tetraethyl lead in the final product.

Many of these objections are overcome in several other treating methods which are used to a lesser extent. In these processes the highly unsaturated constituents are polymerized to a high-boiling polymer which is removed from the treated material by fractional distillation or condensation. Such processes include the Gray process in which fuller's earth or more properly filter clay acts catalytically in the vapor phase to cause this polymerization, the Osterstrom process in which filter clay acts catalytically in the liquid phase, the Lachman process in which zinc chloride is the polymerizing agent, and several others of a similar type. Of these processes the clay treating type are probably in use to the greatest extent.

However, in contrast to these processes in which the product is stabilized by the removal of the unstable constituents, a newer and more economical method of treating is finding increased acceptance in which the unsaturated constituents are not removed, but are protected against oxidation by adding to the gasoline a very small amount of a substance known as a gum inhibitor or antioxidant.

W.P.R.A. — Presented before the Technical Division, Shreveport, La., October 27

Gum Inhibitors

Gum inhibitors are compounds which protect a gasoline by preferentially reacting with the oxygen dissolved in it, instead of permitting it to oxidize the fuel constituents. The development of powerful and efficient inhibitors for gasolines constitutes a brilliant scientific achievement in the petroleum and allied chemical industries. Early work in this field indicated the existence of a large number of organic chemical compounds which might be added in small amounts to gasolines to inhibit oxidation. In general, these compounds were of the type containing phenolic or primary or secondary aromatic amine groupings.[3] However, while the ability to prevent deterioration of the gasoline, when used in low concentration, is the most essential requirement of a commercial inhibitor, there are several other factors which are of considerable importance. In order to be commercially satisfactory an inhibitor should be readily soluble in gasoline, it should be insoluble or very sparingly soluble in water or caustic soda solutions, it should not impart color to the gasoline, and it should be nonreactive with tetraethyl of lead and oil-soluble dyes. Many of the early compounds used were effective as far as oxidation inhibition was concerned, but were not satisfactory for commercial use because they failed to meet these other requirements. However, a large amount of research and development work, carried out by various organizations, has resulted in the development and offering to the trade some very effective inhibitors which meet to an excellent degree the previously mentioned requirements.

Inhibitors Used Today

The inhibitors in general commercial use today are therefore limited to a relatively small number of compounds including such materials as monobenzyl-para-aminophenol, dibenzyl-para-aminophenol, isopropyl monomethyl-para-aminophenol, monobutyl-para-aminophenol, mono-isobytyl-para-aminophenol, and hardwood tar acids. The use of these compounds as gum inhibitors is patented, and they are sold under various trade names by the organizations marketing them, royalty charges being included in the price.

The utilization of gum inhibitors in refining operations on cracked, polymerized, or reformed stocks may be coupled with various treating methods depending upon the nature of the stocks being processed, the fractionation facilities available on the units, and final quality requirements. These may include:

1. Production of end-point and vapor-pressure material directly from the unit, sweetening and inhibiting for stability.
2. Clay treating end-point material to polymerize only the most unstable constituents, sweetening and inhibiting to a satisfactory degree of stability.
3. Using a light acid treatment on a benzine fraction followed by redistilling, sweetening the gasoline and inhibiting to a satisfactory degree of stability.
4. Splitting a benzine fraction into a light and heavy portion in connection with stabilizing operations, acid treating and redistilling the heavy fraction, sweetening the combined redistilled heavy gasoline and light gasoline, followed by inhibiting to a satisfactory degree of stability.

Method No. 1 shown above can of course be used only where the material treated is produced from units equipped with suitable fractionating and stabilizing equipment, and where a water-white color of the final product is not necessary. Ordinarily, this color requirement presents no problem where the final product is dyed. This method offers the greatest possibilities of savings

through the use of inhibitors, since it eliminates entirely the volumetric loss suffered in acid treatment and rerunning, the cost of these operations, and the octane-number loss due to the use of acid. Against these the cost of the inhibitor is very small and there exists a large net savings in expense. It has been estimated that on typical Mid-Continent type cracked stocks this savings can amount to as much as 3 to 4 cents per barrel of gasoline not including the reduction of volumetric loss and lead savings.[4]

The use of inhibitors in the second method also offers economics since it makes possible running the clay to greatly increased throughputs by making a product of poorer initial color and induction period which can be easily handled with inhibitors. Removal of the highly unstable and most active gum-forming constituents in this manner decreases the amount of inhibitor required, so that in the overall the use of inhibitors offers a savings in expense.

The same is true in method No. 3 where a light acid treat using weak acid removes only the most active constituents and the decreased volumetric loss and octane savings more than compensate for the cost of the inhibitor, when contrasted with complete stabilization by means of acid treatment.

These three operations have been previously described in the literature in considerable detail; however, the writer is not familiar with previous discussions of operation No. 4 and will therefore include the following data concerning this operation.

Reasons for Use

Several reasons exist for its use, namely the fact that distillate fuel oils must be produced from the benzine which requires acid treatment and rerunning for satisfactory stability of these products, as well as the fact that the cracking units in question are not equipped to make end-point gasoline. The diagram included here shows this method of processing. Unstable polymer gasoline, reformed straightrun gasoline, and cracked benzine are charged as common stock to the absorption and stabilization unit, along with the wet drum gas. Here this material is fractionated into fuel gas, polymer plant charge, light pressure gasoline and heavy pressure benzine. The heavy pressure benzine is treated with sulfuric acid and caustic soda solution, and redistilled to yield heavy pressure gasoline and distillate fuels. The light and heavy pressure gasolines are blended in the proportions produced, doctor treated, and inhibited for finished gasoline.

In Table 1 a cost comparison is shown for this operation, and conventional acid treatment and rerunning. In making this comparison the following items, which are the result of actual plant experience, are used as a basis:

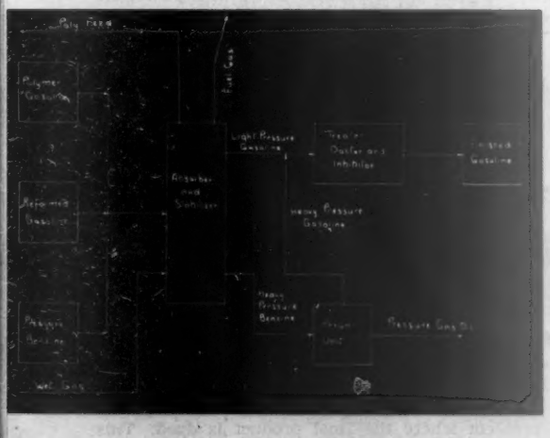

Fig. 1—Refining pressure gasoline

1. In both cases the benzine is considered debutanized to a degree compatible with the vapor pressure required on the finished product, therefore no gas yield is obtained on redistillation.

2. No labor costs are included, as it is assumed that the labor requirements are the same in both operations.

3. No fuel and utility costs are included, as it is assumed these are identical.

4. The induction period of the finished product is the same in both cases.

5. The raw pressure benzine has a gasoline content of 74.5 per cent, and in the splitting operation it is split into 30.5 per cent of light pressure gasoline and 69.5 per cent of heavy pressure benzine having a gasoline content of 63.3 per cent.

6. Oil loss due to polymerization and solution during acid treatment is 0.78 per cent and octane number loss is 1 octane number.

7. Oil loss due to redistillation is 0.52 per cent and octane number loss is 0.5 octane number.

8. Oil loss and octane number loss in sweetening is the same in both cases, and is not considered.

TABLE 1—COMPARATIVE COST FIGURES FOR FINISHING CRACKED BENZINE PER BARREL OF FINISHED GASOLINE

Acid Treatment and Rerunning of Entire Benzine Fraction	
1. Treating:	
Chemical treatment of benzine	$0.0095
Oil loss	0.0205
Lead equivalent to octane loss	0.0106
2. Rerunning:	
Oil loss	0.0136
Lead equivalent to octane loss	0.0052
3. Sweetening:	
Chemical cost	0.0020
Total	$0.0614
Acid Treatment and Rerunning of Heavy Fraction, Using Inhibitor in Final Product	
1. Treating:	
Chemical treatment of benzine	$0.0065
Oil loss	0.0120
Lead equivalent to octane loss	0.0062
2. Rerunning:	
Oil loss	0.0079
Lead equivalent to octane loss	0.0031
3. Sweetening:	
Chemical cost	0.0020
Inhibitor cost	0.0023
Total	$0.0400

These figures indicate that this method of operation, which is made possible only through the use of gum inhibitors, can be carried out at a cost of 2 cents per barrel less than the conventional method of acid treating and redistillation, and represents thereby a considerable savings.

Sweetening operations on gasolines that are to be treated with inhibitors must be carried with a suitable degree of control, for satisfactory and economical results. If doctor treating is used care must be exercised so that the inhibitor susceptibility of the gasoline is not lowered by excess free sulfur. It has been shown that a gasoline may be sweet and noncorrosive and still contain sufficient free sulfur to very appreciably lower the intial induction period, and greatly increase the amount of inhibitor required.[5]

It is also important that a clean separation be made between the gasoline and the treating solution, since alkali reacts with the phenolic groups in the inhibitor and also acts as a catalyst for its oxidation. The gasoline should, therefore, be settled until clear and bright before the inhibitor is added.

In this connection some of the newer sweetening processes such as copper sweetening, produce a product admirably suited for inhibiting since it contains no added elementary sulfur and no caustic soda in suspension.

In making a choice of inhibitors for any particular gasoline the most economical inhibitor can only be determined as the result of experimentation. Inhibitor effectiveness varies in different gasolines, and a simple study of the relationship between improvement in induction period and inhibitor concentration may be used in making this choice. This is illustrated in Table 2 showing the relative effectiveness of four commercial inhibitors in two different gasolines. It can readily be seen that inhibitor No. 2 is the most economical inhibitor for Gasoline A, and inhibitor No. 4 is the most economical for Gasoline B.

TABLE 2—VARIATION OF INHIBITOR EFFECTIVENESS WITH GASOLINES

Inhibitor—	Requirements for 6-hour induction period lb./1,000 bbl.	Price per lb.	Cost/1,000 bbl.
Gasoline A:			
No. 1	6.10	$1.6487	$10.06
No. 2	8.08	0.8487	6.86
No. 3	16.20	0.7387	11.96
No. 4	116.60	0.0927	10.80
Gasoline B:			
No. 1	3.03	$1.6487	$5.00
No. 2	7.27	0.8487	6.17
No. 3	9.10	0.7387	6.72
No. 4	49.29	0.0927	4.57

The use of gum inhibitors in refining operations is, therefore, a modern development, which can readily be fitted into an existing scheme of operations, with little difficulty. By the use of these compounds a product of actually improved quality may be made since valuable constituents in the motor fuels are conserved. Moreover these benefits can be obtained with what every refiner is searching for, namely reduced operating costs.

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Tubing Choke for Well

We have an oil well producing from Clinton limestone at approximately 3,300 ft. The gas amounts to 1,000,000 cu. ft. per day with a rock pressure of 1,250 lb. per sq. in. It is our desire to produce this oil through 2-in. tubing making the gas pressure flow the oil. There is a ready market for the oil, but unfortunately a very limited market exists for the gas. The oil will probably amount to 200 bbl. per day. What size and type of choke would you recommend using and where would you put it in the tubing string?

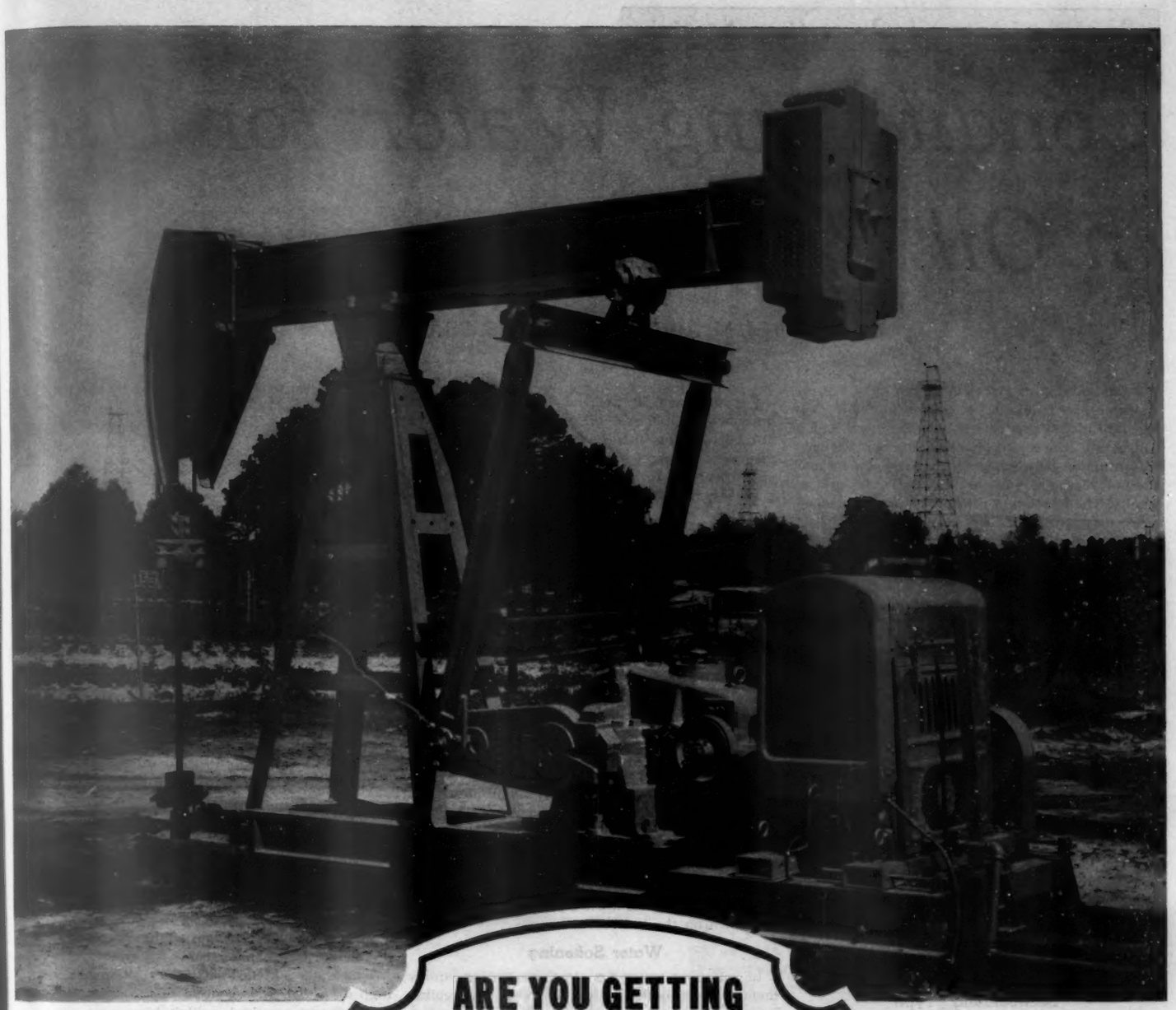
While there is no market for the gas it is evident that you realize that it serves an important function in making your operation profitable by reducing the lifting costs and prolonging the flowing life of the well.

This is particularly important in lime production, as frequently the gas volume may be excessively high during the early life of the well and then will decline quite rapidly. When this happens the oil has little propulsive force.

Any adjustable choke manufactured or sold by a reliable company will be suitable for regulating the flow of the well.

This choke should be installed at the top of the well. While bottom-hole chokes are advisable in many cases, it is believed you will find the surface type more suitable for your purposes. Gas-oil ratio tests should be run on the well as soon as possible to determine the optimum rate of flow.

It is not advisable to choke the well down too much; use intermittent flow if necessary to keep the well on production at a low gas-oil ratio. It may be best to limit your well to under the 200 bbl. per day you mention in your letter, if by so doing you can recover more oil by the flowing method. You may have offset difficulties that might force you to take more oil.



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Conditioning Water for Use in Oil Refining

By J. M. AUGUSTUS and D. S. FRANK
Combustion Engineers, Pure Oil Co.*

IN the refining of petroleum large quantities of water are required for condensing and cooling the finished products to a temperature which will permit safe and economical storage. For this reason major refining centers are usually located close to a large supply of cooling water of proper quality. The location of refining centers near deep water may also be influenced by the desire to obtain low shipping rates not only on the finished products but also on the incoming crude. This item is especially important from the standpoint of export shipments.

The quantities of raw make-up water required per barrel of crude oil processed are much less today than 10 years ago. This decrease is due mainly to the improvement of refining equipment, and the greater use of heat exchange. This has not only resulted in fuel savings but has also caused a material decrease in cooling-water requirements.

The water-cooling systems used in oil refineries are of two general types.

"Once-Through" Type

The "once-through" type, which utilizes water pumped directly from the source of supply, and passed over the oil and vapor exchangers and then returned to the source of supply at some distant point, is popular among coastal plants. Small quantities of the warm return water may be treated and used for boiler-feed purposes or as agitator wash water.

"Recirculating" Type

The other type of water-cooling system is known as "recirculating." Here the warm water is passed over cooling towers or spray ponds and by evaporation is cooled to a usable temperature. In this system it is necessary to add make-up water to offset losses by windage in cooling towers or spray ponds and evaporation.

It is obvious that in this latter system the quantities of raw water required are much reduced as compared to the once-through system. It is this feature of the recirculating system which lends itself readily to the proper treatment of the water in order to prevent scale deposition or corrosion throughout the system.

In order to give some idea as to the extent that cooling-water requirements have been reduced per barrel of refined crude oil when the recirculating water system is compared with the old-style once-through system, the following is offered, the figures being taken from the Toledo, Ohio, refinery operations of the Pure Oil Co. for the year 1932 and for the year ending October 1, 1939.

Refinery Water Needs

For the year ending October 1, 1939, the water requirement per barrel of crude oil refined was 213 gal. This was accomplished by using a recirculated water-supply system.

*Paper presented at third Alabama Conference on Industrial Water Problems and the Disposal of Industrial Wastes, University of Alabama, Tuscaloosa, Ala., Oct. 27-28, 1938.

For the calendar year of 1932 the water requirement per barrel of crude oil refined was 715 gal. During this period the water requirements were supplied by the once-through method. No cooling towers were used at that time.

During the periods mentioned above, refining operations were of a type which took advantage of all opportunities to preheat the cold oil charged to stills by means of heat in residuum oils; hence, the above decrease in water requirements is attributable chiefly to the difference in the types of water systems in use.

Water Treating and Conditioning

The problem of treating and conditioning water for oil-refinery consumption can be divided into two classes:

1. Treating of water for steam-generation purposes.

2. Conditioning of water for cooling purposes.

The supply of raw water is usually identical for both uses, but the method of conditioning the water must be different in order to obtain best operating results. The prime difference is that in water used for steam generation low residual hardness and low solids are essential, whereas in water used for cooling purposes the scale-forming constituents must be inhibited from coming down on the hot surfaces.

Water Softening

In softening water for steam-generating equipment, we use both the hot lime-soda and zeolite systems. In some cases the hot lime-soda treated water is filtered before entering the boilers, depending upon settling time available.

In the Cabin Creek, W. Va., refinery of the Pure Oil Co. the hot lime-soda treatment is used. This refinery, which is located in the heart of the coal-mining territory, is subject to considerable change in characteristics of raw water, and has been known to change from a carbonate to a sulfate water, thereby necessitating a change in treatment.

At this plant all raw water is subjected to a preliminary cold treatment of lime and alum for correct pH control of the recirculating water used for cooling. The make-up water enters the base of the atmospheric cooling tower where it mixes with the circulating cooling water. A portion of this mixed water is then further treated for steam-generating purposes.

An old-type Graver hot softener is used and a typical raw-water analysis entering the softener would be:

	P.p.m.
Total hardness	205
Ghost point or calcium hardness	154
Total alkalinity	35
Sodium chloride	31

This water is primarily a sulfate water consisting of 51 p.p.m. magnesium sulfate, 119 p.p.m. calcium sulfate and 35 p.p.m. of calcium bicarbonate.

Chemical treatment consists of lime, soda ash, and sodium aluminate at a temperature of 200° F. The chemical feed is proportioned by the flow of water into the softener tank.

Typical results of the effluent show:

	P.p.m.
Hardness	5
"P" alkalinity	37
"M" alkalinity	74

It will be noted that no excess hydrates are present in the softened water with an excess of soda alkalinity.

Sufficient phosphate is then used as an after-treatment in such quantity as to show an excess of about 20 p.p.m. in the boiler water.

Continuous blowdown is used, and the amount is controlled by the solids content of the blowdown water.

At one of the Pure Oil Co.'s mid-western refineries zeolite is being used to soften water for steam-generating purposes. This unit is an 8-ft. softener, 16 ft. high, and has a total capacity of 1,890 kilograins. This softener is being operated by upflow.

The water supply is from Maumee Bay and has a typical analysis as follows:

	P.p.m.
Hardness	230
Ghost point or calcium hardness	160
"P" alkalinity	0
"M" alkalinity	152
Sodium chloride	75
pH	7.6

This water is composed of 70 p.p.m. magnesium sulfate, 8 p.p.m. of calcium sulfate and 152 p.p.m. of calcium bicarbonate.

This water softened satisfactorily; however, the high dissolved-solids content of the effluent from the softener required a high blowdown rate at the boiler in order to prevent carryover.

In the winter the bay froze over and effluent waste water from the plant recirculated back into the pump suction. Under this condition water of the following characteristics entered the softener:

	P.p.m.
Hardness	700
Calcium hardness	545
"P" alkalinity	0
"M" alkalinity	192
Sodium chloride	275
pH	6.9

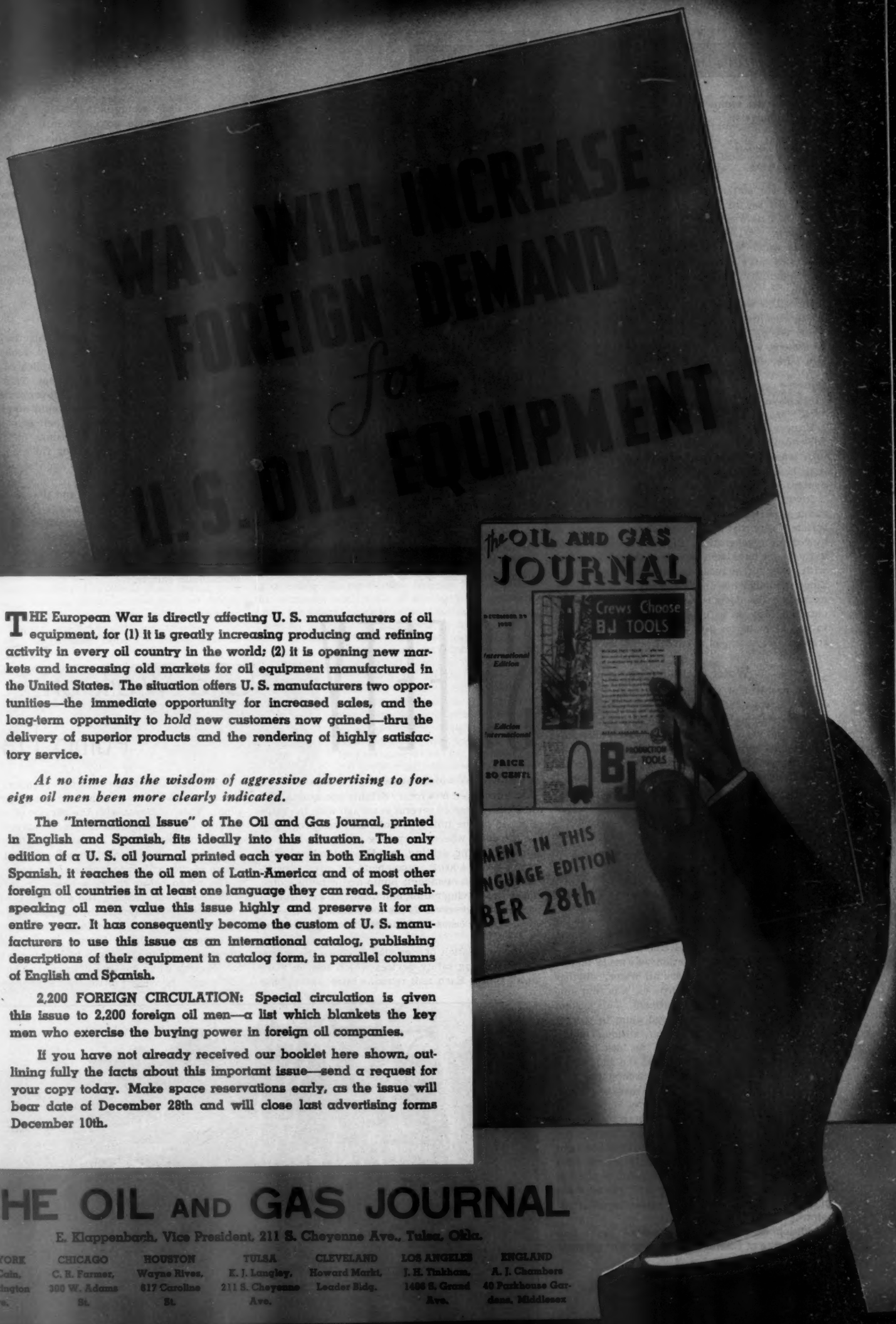
Softener runs were shortened, and since the bad water condition came at a period when steam consumption in the plant was high, the increase in blowdown requirement to prevent carryover seriously affected steam production.

In order to eliminate this condition, pretreatment of lime and alum was instituted last summer. Lime is fed into the center section of the settling tank which contains an agitator. Further down in this same section alum is fed in order to obtain good settling of sludge which accumulates in the bottom of the tank. The tank is periodically desludged.

At the present time raw water of the following characteristics enters the settling tank:

	P.p.m.
Hardness	180
Calcium hardness	140
"P" alkalinity	0
"M" alkalinity	140
pH	7.6

After the lime and alum treatment, the efflu-



THE European War is directly affecting U. S. manufacturers of oil equipment, for (1) it is greatly increasing producing and refining activity in every oil country in the world; (2) it is opening new markets and increasing old markets for oil equipment manufactured in the United States. The situation offers U. S. manufacturers two opportunities—the immediate opportunity for increased sales, and the long-term opportunity to *hold* new customers now gained—thru the delivery of superior products and the rendering of highly satisfactory service.

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ent from the sedimentation plant shows the following analysis:

	P.p.m.
Hardness	115
Calcium hardness	75
"P" alkalinity	10
"M" alkalinity	40
pH	9.3

Complete softening is not desired, and treatment was set up so there was no excess hydrate present. This was done to keep the filter bed from plugging.

This water is then filtered through Anthrafilt filters with the filter effluent showing a pH of 9.2. "P" alkalinity of 10, and "M" alkalinity of 35 p.p.m.

Since this water has too high a pH value for use in the zeolite softener, sulfuric acid is used to bring the pH to the desired point. After the acid treatment, which is fed into a filtered water storage tank, the water has the following test:

	P.p.m.
Hardness	100
"P" alkalinity	0
"M" alkalinity	30
pH	7.7

Prior to the use of prelime softening, the dissolved-solids content of the water leaving the softener was 16.2 grains per gal. Treating with lime, and then acid for pH control, the dissolved-solids content has been decreased to 10 grains per gal.

It will be noted that hardness has been decreased about 40 per cent with a corresponding increase in softener capacity and daily decrease in salt required for regeneration. Blowdown requirements at the boiler have been decreased about 35 per cent, with resultant increase in net steaming capacity. Since the boiler does not have any blowdown heat exchange, the decreased blowdown can be evaluated directly on a fuel-cost basis. The total net saving, allowing for the cost of chemicals used, has resulted in a saving of about 1.5 cents per 1.000 gal. of water.

Water Conditioning

The problem of prevention of scale deposition on cooling coils has received considerable attention from oil refiners generally. The trend of the industry has been towards larger distillation units and better control of finished products. Since important specifications of certain products depend upon the cooling obtained in water condensers, it is important to maintain the proper temperature of the oil leaving the condensing equipment. It is easily possible to decrease the effective capacity of a unit by its inability to obtain the desired degree of cooling.

An average refinery of 15,000-bbl. daily crude capacity will normally use 10,000,000 to 12,000,000 gal. of water per day. With the advent of cooling towers this has been cut to 3,000,000 gal. per day. This was necessitated by not only the cost of the water involved, but due to inability to obtain sufficient supply to meet requirements.

Earlier in the paper, mention was made that in Pure's West Virginia refinery all water, whether used for cooling or steam purposes, was first subjected to a cold lime-alum treatment. This system originally used sulfuric acid and alum to correct the pH of the recirculated water, although alkali equipment was also provided. The idea in back of this type of treatment was first the addition of alum to accelerate settling, and second the feed of acid to control the CO_2-alkalinity ratio to prevent the deposition of calcium carbonate.

Since each time the circulated water passed over the cooling tower some CO_2 was lost, thereby upsetting the calcium carbonate pH equilibrium, and as the makeup water was the only source with which to correct the equilibrium point of the circulated water, chemical feed of acid was adjusted on the basis of maintaining the correct equilibrium point.

Addition of makeup water varied, depending upon the rate of cooling in the tower and windage loss. In addition, since the blowdown from this system was recirculated water used for further softening for steam generation, the amount of blowdown depended upon steam produced. The feed of chemical was adjusted by test and from that setting the feed of chemical was proportioned to the flow of water to the setling basin.

Results obtained were not desirable, and the use of lime replaced the acid, with alumn still used as a floc accelerator. The prime factor is controlling the pH of the recirculated water so that no calcium carbonate is deposited, yet at the same time prevent erosion.

In order to test the recirculating water, we are using the procedure outlined by C. P. Hoover on "Treatment of Circulating Water for Cooling Purposes." This is a very simple test, and our experience has been that it is fairly accurate.

Equilibrium tests on recirculated water are made and the treatment of makeup water adjusted to maintain a slightly depositing water at all times. The temperature gradient in any one cooling box may be as much as 100° F.; furthermore, since a common header may feed water for several different cooling functions, it is necessary that equilibrium tests be performed at various temperatures. In oil refining one water box may cool a certain material from an entering temperature of 450° F. to an outlet of 200° F., whereas the box adjacent may cool 200° entering material to 100° F. It is, therefore, apparent that the circulating water must protect as much as possible, and a water which might be in balance at 100° F. may be 20 p.p.m. depositing at 200° F.

When scale accumulation becomes too heavy, the system is made aggressive in order to remove the heavy scale formation. This period is ordinarily not long enough to sufficiently corrode the clean coils.

The equilibrium test does not seem to hold for steel side sheets and bottoms of cooling boxes, and in some cases these parts have shown corrosion present when cooling coils have some scale deposition. No doubt oxygen plays an important part in this action; however, to date our experience shows it to be more economical to replace sheets in preference to the use of chemical to eliminate the oxygen present.

Algae Control

The chemical treatments used for the prevention of algae growth in refinery recirculating water systems is somewhat complicated by the presence of oil in the water system. This oil covers both live and dead algae, and it prevents proper chemical action, which action would otherwise be effective in the elimination of their growth. This difficulty can be partly overcome by frequent skimmings of the reservoirs or flushing of condenser boxes at points where such algae usually accumulates.

The study of algae growth and the use of algaecides is a subject which merits discussion in greater detail than is possible within the scope of this paper, but I might add that we have used copper sulfate, potassium permangante and are now using hypochloride of lime in conjunction with ammonium sulfate.

SAFETY - Grid Work on Pump Frame

RECENTLY a high degree of portability has been introduced into rotary drilling operations. This movement started several years ago with the introduction of the unit-type hoist and has progressed to the point where everything possible is built on one skid. For drilling in comparatively shallow areas, up to 4,000 ft., a complete rig often consists of three main members: pump and driving motor, hoist and driving motor, and mast. An extension of the hoist skid serves as the foundation for the derrick in some cases, while in others a separate base is provided.

The unitization of rigs also provides the means of introducing safety devices which stay in place at all times. Each unit remains intact throughout moving and during the drilling operation, and it can be built with the permanence of any industrial plant. This contrasts with the rig not unitized, as during rigging up and the early stages, many guards are not in place and safe practice is often sacrificed in the name of expediency and to the desire of the drillers to start making hole.

The photo below shows a new-type rotary rig with one unique feature, the grid work over the pump skids. It eliminates the necessity of covering the skids with boards and in the final analysis is an important economic feature. It also makes an adequate working platform which does not become too slippery when covered with mud. The overall addition to the weight of the unit is negligible.

METALS in DRILLING

By W. L. NELSON

PART 7—CROWN AND TRAVELING BLOCKS

No general improvement is contributing more to the success of deep-well drilling than the improved steels and materials now being made available to the industry. Year by year, as deeper tests are drilled, the metal manufacturer has provided tougher and more durable steels without which drilling operations would have been uneconomical. This is one of several articles through which we hope stronger and often cheaper alloy materials may be brought to the attention of our readers. Recommendations are from authorities, manufacturers and fabricators. Other articles on the subject of metals for drilling equipment are: Portable Servicing Equipment, August 10, 1939; Slush Pumps, August 24, 1939; Rotary Chain, September 7, 1939; Rotary Equipment, September 28, 1939; Drilling Hoists, October 5, 1939; Engine and Machine Castings, October 19, 1939

ALTHOUGH the general conditions under which crown and traveling blocks operate are not, in some ways, as severe as those encountered by cutters, reamers and other heavy drilling equipment, the fact they are expected to last presents an entirely different problem. Cutters are expected to be replaced, whereas blocks are expected to be used for years. Thus, although the latter service is not particularly severe, it is still advisable to use strong alloy steels for nearly all parts of the crown and traveling blocks. A marked advantage in present practice is the decrease in weight that is possible by the use of alloy steels. Alloy-steel equipment is usually stronger as well as lighter and it can be handled or transported with greater ease.

Crown and traveling blocks are often subjected to sudden impact loads and to severe shock during such operations as running casing or when used on fishing jobs. In this use alloy steels are generally far superior to plain carbon steels. In addition to shock, the sheaves of a block must resist the severe wear of heavy steel lines operating at high speeds. For wear resistance in such service, the Brinell hardness should be over 300, and if an easy machining steel is used, such as manganese molybdenum, a hardness of even 350 can sometimes be attained. Steels for these services are listed in the accompanying table.

Hardness.—Although the need of great hardness is not particularly associated with crown and traveling blocks, it is such a common requirement for most drilling equipment that certain measuring sticks of hardness will be useful. Hardness is very often proportional to wear resistance although many exceptions have been noted. (An extreme example is the good wear resistance of lead as compared with stellite or other extremely wear-resistant materials, when used as threading dies for feathers or quills. It seems that the extremely tough scale on the feathers requires a somewhat plastic material rather than pure hardness.) Likewise, difficulty in machining is nearly proportional to hardness—but again certain materials can be machined more easily than others of the same Brinell hardness. The molybdenum steels are said to possess easy-machining properties and to exhibit a wear resistance that is greater than their hardness would indicate. Finally, certain austenitic steels, notably the high-manganese steel known as Hadfield manganese steel, has a hardness of 200 but is greatly hardened during use or at least exhibits excellent wear characteristics. Such steels are said to work-harden during service. In use, such steels become highly polished and will take on an extremely wear-resistant surface.

The problem of steel manufacturers is to get as much wear resistance and hardness as is possible without making the steel too brittle for the service and without exceeding economic limits by increasing the costs of machining and fabrication. As a general indication of those limits, the following table shows Brinell hardness numbers in relation to commonly experienced fabrication troubles or difficulties in handling the materials:

Brinell hardness number	
150	Excellent machinability
180	Readily machinable
220	Good machinability
260	Economically machinable
320-400	Must use tungsten carbide faced tools or high-speed steel
340 and up	Oil-field tongs will not grip
400	Upper limit of machinability
350-550	Nonmachinable
550	White cast iron or chilled surface have this hardness
600+	Carburized and case-hardened surface
...	Diamond, tungsten and tantalum carbides

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Metallurgical Terms

Blue Annealing and Bright Annealing

Blue annealing is a process of annealing sheets after rolling. Light sheets are passed singly through an open furnace where they are heated to the proper temperature. Heavy sheets are simply allowed to cool slowly after their hot rolling to accomplish the same qualities. The sheets exhibit a bluish-black appearance.

If, however, surface oxidation must be kept to a minimum, the objects being annealed are heated in closed pots, boxes or other containers, often in the presence of reducing gases. Such treatment is referred to as "bright annealing" or "box annealing."

CROWN AND TRAVELING BLOCKS

Part—	Material*	Approx. composition, per cent— C	Mn	Cr	Ni	Mo	Ap. physical properties— Y.P.	Elong.	Brinell	Heat treatment	Reference
Sheaves	Cast moly steel	.45	2.25	....	....	.3	125,000	16	325	Quench & Temper	20
Sheaves	Cast 3140	.4	.65	.6	1.25	....	130,000	16	320	O.Q. 1500-T 1000	15
Sheaves	Cast 3235	.35	.45	1.05	1.75	....	130,000	18	330	O.Q. 1500-T 1000	15
Sheaves	Cast 4630	.3	.5	....	1.75	.25	130,000	20	310	O.Q. 1550-T 900	15
Sheaves	Cast steel	.3	1.55	....	....	.1	122,000	16.5	...	Quench & Temper	22
Sheaves	Cast steel	.3	.9	....	1.5	.1	109,000	19	....	Quench & Temper	22
Sheaves	Hadfield manganese	1.1	12.5	....	....	(Si 0.6)	35,000	50	†200	Soaked & Quenched	34
Bearings and pins	Wrought 2315	.15	.45	....	3.50	....	.....	..	600+	Carburized	15
Bearings and pins	Wrought 3115	.15	.45	.6	1.25	....	.....	..	600+	Carburized	15
Bearings and pins	Wrought 4615	.15	.45	....	1.75	.25	.....	..	600+	Carburized	15
Pins	Wrought 3250	.5	.45	1.05	1.75	....	140,000	18	320	O.Q. 1500-T 1100	15
Pins	Wrought 4140	.4	.75	.9	....	.2	145,000	15	325	O.Q. 1550-T 1000	6
Shafts	Wrought 4140	.4	.75	.9	....	.2	135,000	17	300	O.Q. 1575-T 1050	6
Shafts	Wrought 3140	.4	.75	.75	1.25	....	125,000	17	300	O.Q. 1500-T 950	19
Shafts	Wrought 3245	.45	.45	1.0	1.75	....	140,000	18	330	O.Q. 1450-T 1000	19
Shafts	Wrought 2335	.35	.65	....	3.5	....	135,000	20	290	O.Q. 1425-T 1000	19

*The numbers of these steels are taken from the S.A.E. classification system. †Hardens with use or cold-work.

High-Pressure Development in the Bradford Field

By J. P. O'DONNELL

WHILE it has been recognized for some time that high pressures result in earlier and greater ultimate recoveries in water flooding, operators in the Bradford field of Pennsylvania have shown but little disposition to increase substantially the pressure of their input water. This is undoubtedly due to the fact that practically all properties already under development are equipped to handle comparatively low pressures and that the water lines and tubing would not withstand the higher pressures if the plants could supply them.

Various limits have been put upon the degree of pressure that could be used safely but these have proven definitely elastic in field operation. The limit of safe operation is generally regarded as 1 lb. of pressure at the sand face for every foot of overburden. Theoretically, pressures in excess of this amount would lift the overburden and result in bypassing of the sand entirely.

Probably the outstanding exponent of high-pressure operation in the Bradford field today is A. H. Wiborg, whose Mayrock lease is being developed with a view to using pressures sufficiently high to exceed the theoretical safe limit by a large margin. This lease is equipped with the largest pressure plant in the Bradford field, having a total horsepower of 950 and providing a maximum pressure of 2,500 lb. per sq. in. In addition, all other equipment will be capable of handling pressures of this degree and larger-than-usual jacks are being employed to handle the expected large amount of water that will be produced with the oil.

Depth of Wells

Wells on this lease are from 1,200 to 1,900 ft. deep and have an average sand thickness of 30 ft. At present the plant is being operated to provide input well-head pressures of 2,000 lb. per sq in. This pressure, plus that resulting from the hydrostatic head, will result in sand-face pressures of from 2,500 to 2,800 lb. per sq. in. which is in pronounced contrast to the 1,000 to 1,800 lb. per sq. in. used on most properties in this field.

Water intake wells on this lease are equipped with 1½-in. 3,000-lb. test tubing. In order to insure a secure setting for the packers, 20 sacks of cement are run in above the intake well packers, double the amount normally use for this purpose. The 1-in. valves on the intake lines are 1,800-lb. test brass valves which have been found to resist cutting much better than steel. The main water lines are 4-in., 2,500-lb. test, all-welded, of which 6,700 ft. were laid. Branch lines, also 2,500-lb. test, are 2-in. seamless pipe. This system has been found adequate to handle the high pressures employed.

Intake volumes averaging 100 bbl. per well per day are anticipated and, in order to accommodate the large water production expected, larger jacks than are normally used in the Bradford field are being installed. Each jack, all of which will be electrically operated, is installed on a concrete foundation. The type of jack used has a 45-in. stroke, much longer than that of the jack usually used in this field. At the speed at which these jacks are now operating they have an average capacity of 10 bbl. of fluid per hour.

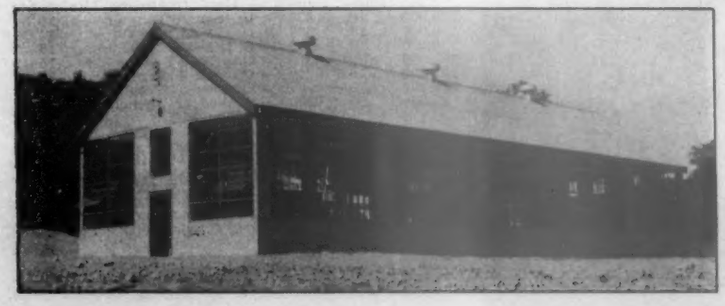
The pressure plant, a 90 by 30 by 14-ft. structural steel building, is equipped with three units. These units have a combined capacity of 18,000 bbl. per day, sufficient to supply 180 intake wells if the anticipated intake volume of these wells is realized. The water supply is obtained principally from three deep-well turbines and additional water is purchased.

Providing power for the pumps are two five-cylinder 13¼ by 17½-in. engines and one three-cylinder, four-cycle, 9 by 10-in. vertical engine, all of the enclosed type, employing force-feed lubrication. One large engine is rated at 390 hp. at 360 r.p.m., the other, at 415 hp. at 360 r.p.m., and the small engine at 105 hp. at 600 r.p.m. All are convertible and at present the small engine and one of the large ones are being operated on gas while the third is operating on fuel oil. In addition to gathering gas for the plant from producing wells, gas is also obtained from the intake wells which produce from the second sand. The engines are started by compressed air from a tank in which a pressure of 200 lb. per sq. in. is maintained by a 4½ by 2½ by 2¾-in. two-stage compressor driven by a 5-hp. electric motor.

Heat exchangers, comparatively new in the Bradford field, are employed to cool the jacket water and, as a result, no cooling tanks are necessary. The only tank employed in this water system is a small 8-bbl. surge tank located in the peak of the building. Since hot water does not circulate through this tank, only a minimum amount of makeup water is required. Bypass valves, by which the passing of water to the heat exchangers is controlled, permit the regulation of jacket temperatures which are being carried at approximately 120° F. The advantages of this system are obvious.

The two large pumps are 3½ by 18-in. horizontal duplex double-acting four-plunger type units rated at 2,500-lb. per sq. in. pressures and 7,500-bbl. per day capacity. The small pump is a 3 by 10-inch and is rated at 1,270-lb. per sq. in. and 3,000-bbl. per day capacity. This pump supplies that section of the lease which was partially developed at the time of purchase.

All of the units are equipped with such safety devices as overspeed trips, excessive water temperatures, excessive lubricating-oil temperature, water-supply failure, lubricating-oil pressure failure controls that will shut the units down. In the event of a lowering of the water supply, one unit shuts down at a time so as to maintain as nearly maximum efficiency as possible.



Above: Typical pumping jack used. Left: Pressure plant operated by A. H. Wiborg on the Mayrock lease in the Bradford field

BOOKS

WINSTON COUNTY MINERAL RESOURCES. A bulletin of the Mississippi State Geological Survey, No. 38. Geology by Frederic Francis Mellen, and tests by Thomas Edwin McCutcheon. 169 pp. University, Miss.

As its title suggests, this volume was prepared to obtain a comprehensive idea of the mineral resources of the county, which is located in the east central part of Mississippi.

THE FIRST FIFTY. By F. Lawrence Babcock. 64 pp. Standard Oil Co. (Indiana).

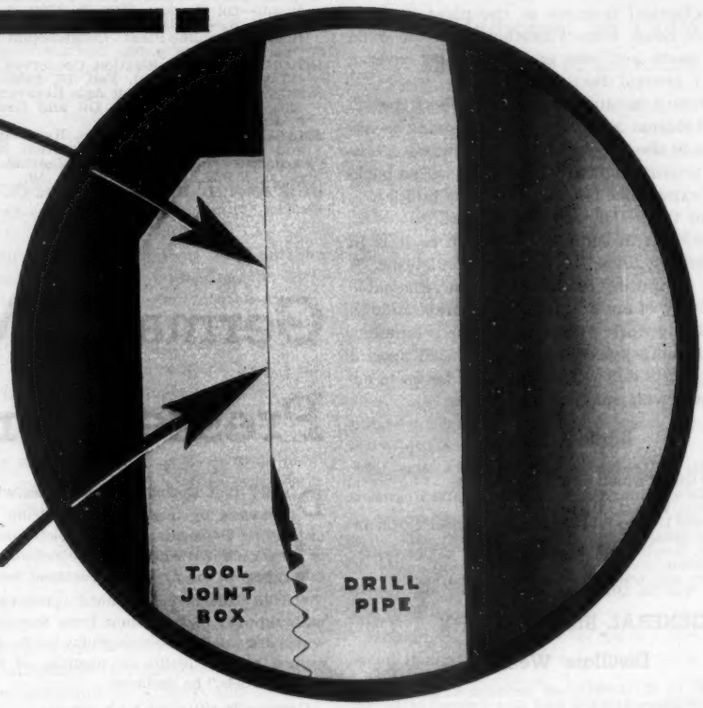
An outside observer gathered the material and wrote from his detached point of view the story of the part Standard of Indiana has played in the development of the oil industry and the Middle West. Essentially, the booklet is a history of the company, into which considerable romance has been woven so that it is refreshingly different from the usual run of great corporation historical reviews. It is written in a popular style, and is profusely illustrated.

GEOLOGY AND PETROLEUM RESOURCES OF CLAY COUNTY, TENNESSEE. By Kendall E. Born and H. B. Burwell. 200 pp. Nashville, Tenn.: Tennessee Division of Geology. $1.

This is the first detailed report on an area which has produced from the Ordovician for nearly 75 years. Areal geology, stratigraphy, subsurface geology, structure and oil developments are treated. Included are areal geologic maps, structural map on the Chattanooga shale, individual field maps with subsurface strata. Also, subsurface data on 352 wells.

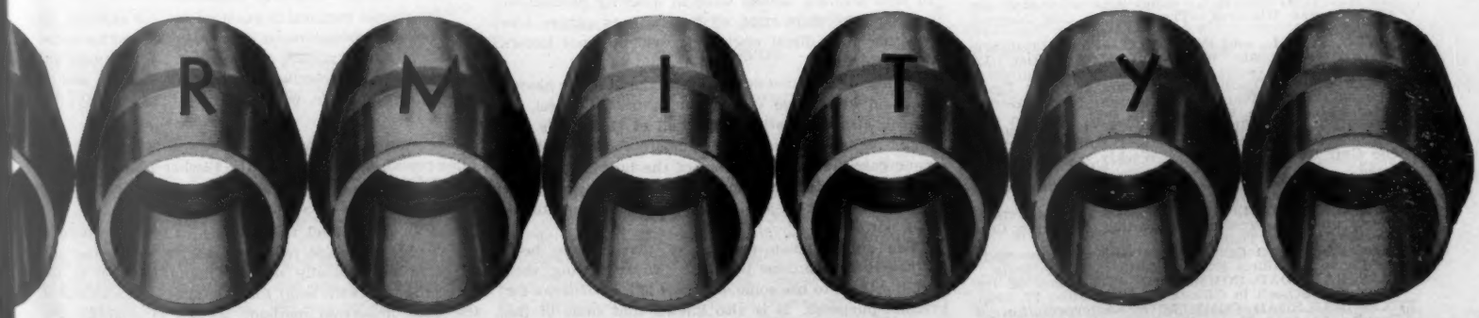
REED SHRINK GRIP TOOL JOINTS

The SAFETY AREA designed by the Reed Roller Bit Co. to reduce the hazards of costly failures.



(THE DANGER POINT IS BRIDGED OVER)

AN ADDED SUPPORT
SHRUNK ONTO THE DRILL PIPE
FOR GREATER STRENGTH



BIT COMPANY HOUSTON TEXAS

Compression Requirements

(Continued from Page 33)

The above method of computing the brake-horsepower requirements will meet average conditions and assumes good design throughout the plant and compressor. There are a few odd cases where mechanical features of the plant or compressor will cause some variation from the data, but these cases are rare and cannot be covered readily in a general discussion.

Summarizing, it can be stated that there are no unusual problems involved in compressing petroleum gases at the pressures now in general use in recycling, provided sound engineering with a background of experience is available to the builder.

Deviation from the perfect gas laws is not as much a problem in compressor design as it is in other equipment involving density calculations. A method of computing deviation within reasonable limits is reviewed and found to be accurate enough for engineering work where only vapor is handled.

The brake-horsepower curves are based upon a great many tests and will be found to be quite accurate over a wide range of conditions.

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Germany May Not Be Hard Pressed for Petroleum

DOUBT that Germany's war plans will be seriously hindered by inadequate petroleum supplies is expressed by Dr. Benjamin T. Brooks, consulting chemist of New York and editor of "The Science of Petroleum," in a report to the American Chemical Society.

"Given adequate technical preparation, together with supplies of petroleum from Rumania and Russia which are possible, Germany may not be seriously handicapped by the quality or quantity of her motor and aviation fuels," he declared.

Germany's situation with respect to motor fuel and high-octane aviation fuel, Dr. Brooks points out, resolves itself largely to questions, first, of supply of basic raw material, petroleum; and, second, of technical preparation, including adaptation of engines to utilize all available types of fuels, and manufacturing equipment to produce high-octane and other types of motor fuel.

"There can be little doubt," he says, "that Germany is handicapped in the facility with which high-octane aviation fuels can be manufactured. There is no satisfactory or reliable statistical information to show how far Germany has gone in the solution of this general problem. However, some of the best methods developed in this country for manufacturing high-octane fuels are fully known in Germany and are in commercial operation there."

Diesel-Powered Planes

There is abundant evidence, according to Dr. Brooks, that Germany's motor and aviation fuel needs have been well studied. "It is known that her large transport planes were powered with diesel engines," he continues. "In 1936 airplane diesels were in quantity production. However, the proportion of her military planes now operating with diesel engines is evidently not known outside Germany.

"Civilian and United States military authorities having first-hand knowledge of Germany's use of diesel engines in airplanes estimate that all of Germany's fast pursuit planes and the faster bombers operate on high-octane gasoline and that some of the heavier bombers and the converted transport planes, comprising probably 20 per cent of the entire air force, operate on diesel power.

"Also an unknown number of planes have been adapted to use benzene blends, by water cooling, thus enabling them to use some 4,500,000 bbl. of benzene for aviation purposes. It is also known that some of the newer types of motors use the forced-injection method, which is also used in diesel engines, thus enabling them to use gasolines of a wider range of octane and volatility characteristics to much greater advantage.

"The substantial advantage of 100-octane aviation fuel in military planes is well established. However, it cannot now be said with any degree of certainty that the Allies will have such an advantage in the present war. How great such an advantage may be in warfare may perhaps be debatable at present. Lindbergh flew to Paris in 1927 using gasoline of about 96-octane value. How serious Germany's petroleum shortage and manufacturing difficulties may be will no doubt be disclosed as the war develops."

At first glance, Dr. Brooks goes on, it would appear that Germany is not able to produce high-octane aviation fuel in quantity. "Several of the special methods employed in this country to produce such fuels are practically ruled out for Germany."

"Until the past few years, our commercial and military aviation gasoline has been derived largely from the light fractions of relatively few crude petroleums yielding a straightrun gasoline having an octane value of about 70, which, by the use of tetraethyl lead, can be raised to aviation standard of about 87 octane.

Limited Choice of Crudes

"Even with our enormous production and wide variety of crude petroleums, such aviation fuel from straightrun gasoline is quite limited in amount and about equal to our peacetime requirement. Germany has no such wide choice of crudes, but she does produce tetraethyl lead.

"Several special methods of manufacturing 100-octane fuel used on an increasing scale in this country can be of no practical value to Germany, since these methods involve the selection of the necessary olefins from large refinery operations or by cracking propane and butane from natural gas, and Germany has neither the natural gas nor extensive refinery operations.

"The special methods in question are, for example, the conversion of isobutene to isooctene followed by hydrogenation, the alkylation of isobutane by isobutene and other olefins, as described recently by Dunstan and his associates, and the manufacture of isopropyl ether blends.

"Another of Germany's difficulties is that the gasoline produced from coal by the Fischer-Tropsch process has a very low octane value and must be cracked or reformed to produce good motor fuel.

"On the other hand, the gasoline made by the Berglus process has an octane value of about 70, or substantially equal to the specially selected naphthas used in the United States (with lead) for aviation fuel. Also one of the most important methods, so far as quantity production of high-octane aviation fuels is concerned, is that of catalytic hydrogenation and the reforming of low-octane naphthas under high pressure with hydrogen.

"Catalytic hydrogenation for motor fuel had its origin in Germany, though further developed and improved here. There are two types of such processes yielding, according to the conditions, gasoline of about 70-octane value or of 80 to 82-octane value, without lead."

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Estimates of Demand for Crude Oil Compared With Production

I have noticed the publication of estimates of the demand for crude oil made by the U. S. Bureau of Mines but have never seen a report showing how these compare with actual production. Have you any information about this matter?—S. T. E.

The Bureau of Mines has issued forecasts estimating the demand for crude oil by the several oil-producing states. These are made each month. The details for the year 1938 have recently appeared in the Minerals Yearbook for 1939.

The actual production for the United States averaged about 60,000 bbl. less than the estimates. Stocks were drawn on nearly 85,000 bbl. daily, hence actual demand ran close to 25,000 bbl. or less than 1 per cent above the bureau's estimate.

The allowable, Bureau of Mines estimate and actual production for June 1938 will serve as an example of how the figures compare.

DAILY PRODUCTION OF OIL IN THE UNITED STATES, JUNE, 1938

	(Bbl.)
Texas:	
Allowable	1,206,000
Estimate	1,329,000
Production	1,212,000
Oklahoma:	
Allowable	405,000
Estimate	508,000
Production	431,000
California:	
Allowable	620,000
Estimate	650,000
Production	672,000
Kansas:	
Allowable	168,000
Estimate	172,000
Production	157,000
Louisiana:	
Allowable	250,000
Estimate	250,000
Production	261,000
New Mexico:	
Allowable	91,000
Estimate	108,000
Production	87,000
Arkansas:	
Allowable	45,000
Estimate	48,000
Production	42,000
Other states:	
Estimate	268,000
Production	281,000
Total Bureau of Mines estimate	3,333,000
Actual production	3,143,000

Note: The allowable is that of the regulatory commission or committee of the state. Estimate means that of the Bureau of Mines. Production is actual.

Reference: White, Hopkins and Breakey, Crude Petroleum and Petroleum Products, U. S. Bureau of Mines, Minerals Yearbook 1939.

Analysis of Soil for Hydrocarbons As Utilized in Oil Prospecting

Could you give me an outline of the method applied for making analysis of soil for gas and oil in connection with geological prospecting? Will you furnish some references to soil-gas analysis?—C. M. and W. N. T.

The fundamental principle upon which soil-analysis methods for oil prospecting is based is the fact that gas and oil seepages have played a very important part in the discovery of oil fields. It is reported by George Sawtell that prior to 1936 there were 141 salt-dome fields discovered in the Gulf Coast area and of these 75 were found as a result of hydrocarbon seepages, and of these 33 resulted from gas seeps. There are probably no formations laid down in the earth's surface which are absolutely impervious to gas, so in the course of time it is reasonable to suppose that traces of oil, oil residues and some gas may be found near the surface which have escaped from accumulations of oil and gas much farther below the surface.

The technique applied to soil-gas analysis involves accurate sampling and collecting the soil from about 5 to 10 ft. below the surface by means of a boring tool. Four analyses per mile are recommended. The soil is brought to an air-dry basis and then all determinations made by a percentage by weight. Surface waxes and liquid hydrocarbons may be determined by extraction with suitable solvents. The collection of these materials and their actual percentage determinations are among the most important and reliable data utilized for this purpose.

The samples are heated to expel gases and vapors which are collected in convenient vessels from which portions are transferred to standard gas-analysis apparatus for the determination of such constituents as carbon dioxide, oxygen, methane and hydrogen. Other portions are transferred to temperature-fractionation apparatus where such constituents as ethane and heavier hydrocarbons are determined, the ethane and heavier hydrocarbons being considered more reliable indications than the presence of methane.

The arranging of the data to coincide with geological formations is important and proper interpretations must be made in order to be of value.

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Physical and Chemical Laws and Principles Used in the Petroleum Industry

THERMAL EXPANSION AND COEFFICIENT OF EXPANSION

The coefficient for linear expansion of solids is the ratio of the change of length per degree C. to the length when at 0° C. The volume expansion of solids is three times the linear coefficient.

The coefficient of volume change for liquids is the ratio of the change in volume per degree to the volume at 60° F. for petroleum liquids. The coefficient of volume expansion for gases is very close to a constant for all gases, that is 0.00367 or 1/273 per 1° C. (See Gay-Lussac's Law.)

The coefficients of expansion and volume correction tables for petroleum oils are available in national Bureau of Standards Circular C410.

Iron by Hydrogen as Catalyst for Production of Gasoline

Would you please be good enough to inform me whether or not iron by hydrogen is used at the present time in any quantity as a catalyst for refining processes in the production of gasoline?—J. C. M.

The literature indicates that pure iron is used in some chemical processes as a catalyst, where the operation is on a very small scale of a research type. Iron of such purity as indicated "by hydrogen" is not available in large enough quantities, and the cost prohibitive, to be utilized for the production of gasoline.

Numerous efforts have been made to prepare absolutely pure iron but it appears that large-quantity production of the element has not been accomplished.

The purest form of commercial iron is that made by the American Rolling Mill Co., known as Armco iron. This contains 99.941 per cent iron with only 0.059 per cent impurities consisting of carbon, manganese, silicon, phosphorus and sulfur. This form of iron should satisfy most requirements for catalytic use.

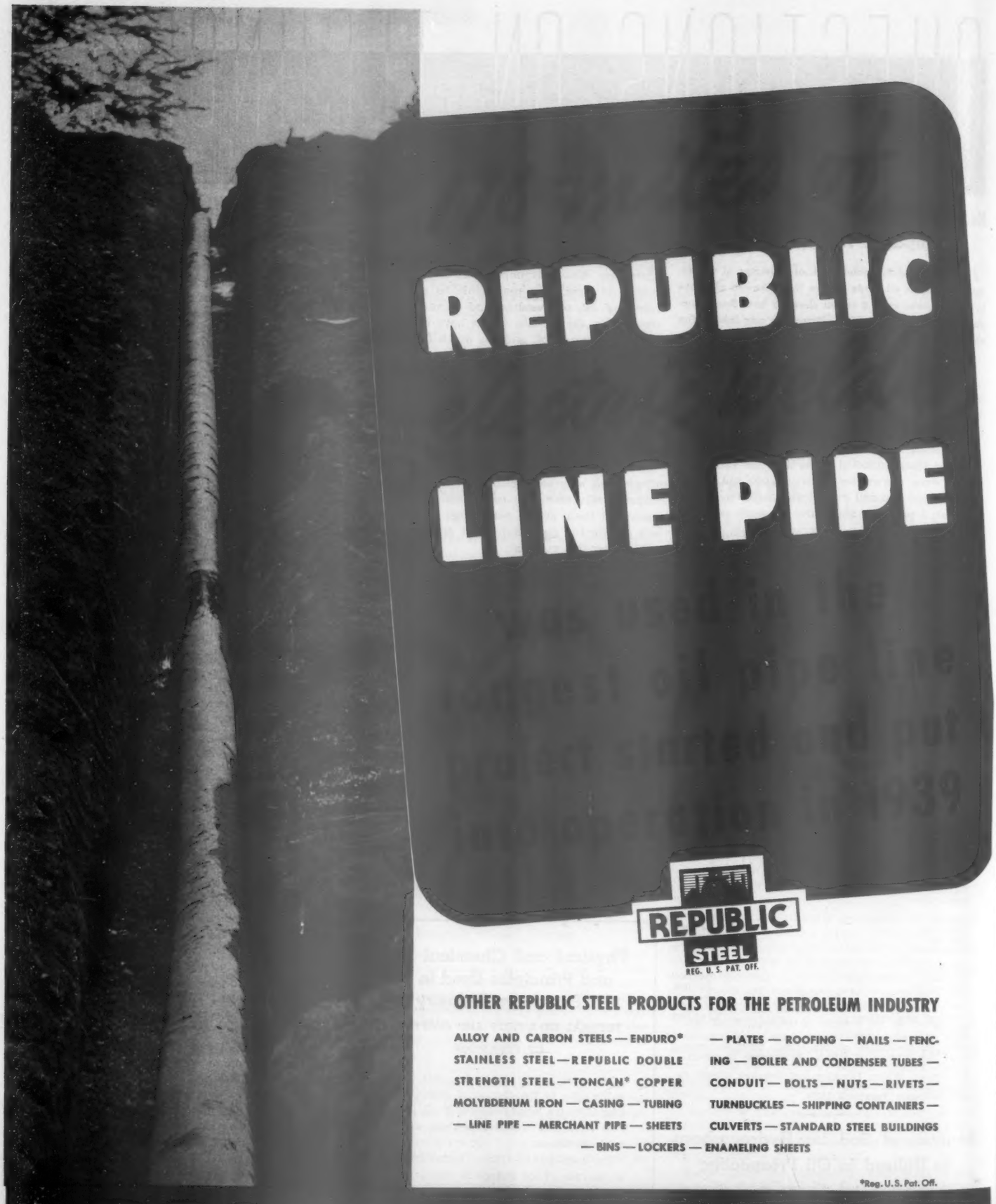
Iron of a high degree of purity has been prepared in many laboratories; the yields, sufficient for scientific purposes, have been small and obtained at high cost. The final operation has been treatment with hydrogen, hence the term "iron by hydrogen."

Simply to illustrate what operations may be involved a short quotation is made from the detailed discussion of the subject by Mellor.

"With the idea of removing traces of sulfur, phosphorus, silicon, and occluded hydrogen, M. Crolas removed sulfates from ferric chloride by barium chloride, purified the chloride by recrystallization, and then converted the chloride to oxide for reduction with hydrogen. H. Kreusler converted purified Mohr's salt to oxalate, converted the oxalate to oxide by heating it over an ether flame, and reduced the oxide in a hard glass tube with purified electrolytic hydrogen. A. Sanfourche, L. C. Turnock, N. Parravano and P. de Cesaris, Vereinigten Stahlwerke, and O. Russ and E. Gersten also purified the oxide before reducing it with hydrogen. T. W. Richards and G. P. Baxter dissolved electrolytic iron in purified concentrated nitric acid, and after recrystallizing the nitrate a few times treated the solution with aqueous ammonia. The washed and dried hydroxide was heated in a porcelain tube at 900° in a current of purified electrolytic hydrogen for 20 hours. F. K. Bell and W. A. Patrick recommended heating the nitrate in hydrogen at 600° for 7 hours and then 1 hour at 1,000°; and G. P. Baxter and C. R. Hoover recommended heating the nitrate in air at 1,000°, until its weight is constant, and then reducing the oxide in hydrogen at 1,100° to 1,150°."

Reference: J. W. Mellor, Treatise on Inorganic and Theoretical Chemistry, Vol. XII, p. 758.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.



OTHER REPUBLIC STEEL PRODUCTS FOR THE PETROLEUM INDUSTRY

ALLOY AND CARBON STEELS — ENDURO* STAINLESS STEEL — REPUBLIC DOUBLE STRENGTH STEEL — TONCAN* COPPER MOLYBDENUM IRON — CASING — TUBING — LINE PIPE — MERCHANT PIPE — SHEETS — PLATES — ROOFING — NAILS — FENCING — BOILER AND CONDENSER TUBES — CONDUIT — BOLTS — NUTS — RIVETS — TURNBUCKLES — SHIPPING CONTAINERS — CULVERTS — STANDARD STEEL BUILDINGS — BINS — LOCKERS — ENAMELING SHEETS

*Reg. U. S. Pat. Off.

REPUBLIC STEEL

When writing Republic Steel Corporation for further information, please address Department OG.

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—A wildcat north of the Ramsey pool, Payne County, found Viola lime high after having showings of oil in Misener sand. A third and intermediate producing zone was found in the Chickasha gas field, Grady County. A Dutcher-sand pool opener was completed southeast of the Sasakwa area, Hughes County.

KANSAS—Oil was found in quartzite at a wildcat 1 mile east of the Orth pool in Rice County. A northern Barton County wildcat was showing for small production in Lansing lime. A Tucker-sand pool was opened in Crawford County, southeastern part of the state.

LA-ARK-TEX—Saturated oil sand in the lower Marine was being cored in the Lisbon, Louisiana, field. The outcome may mean much to this field which produces from higher horizons. Seven locations were made in the Golden Meadows field in coastal Louisiana. A 682-bbl. well was completed in a new deep sand on the south flank of the Darrow dome in Ascension Parish.

TEXAS—Distillate production was opened in the Odem area in San Patricio County. The Magnolia City field in Jim Wells County has another dry hole. In Ward County, in West Texas, an indicated pool opener developed into an 18,000,000-cu. ft. gas well and will be drilled deeper. In the Wasson-Bennett field in Yoakum County 12 completions average 1,100 bbl. per well initially. The search for deep Trinity-sand oil in eastern Texas is broadening and the deep tests now number 11.

MICHIGAN—Thirty-one wells were completed in Michigan, which may have exceeded all weekly records. They averaged 500 bbl. per well in initial potential production.

WYOMING—The Lance Creek field in Wyoming supplied another big well, flowing 200 bbl. per hour through casing and 105 bbl. per hour through tubing for 14 hours.

ILLINOIS—Average daily crude-oil production rose to 338,755 bbl. in the past week, with Louden responsible for the largest increase, production in that field having been 71,025 bbl. a day. Ninety new operations were started in the state of which 30 were in the Louden field. Sixty-three new wells were completed during the week.

CALIFORNIA—Possibility of a new field, or an extension to the Greeley field in Kern County, was seen when saturated sand was cored at 11,340-80 ft. in an outpost well.

MISSISSIPPI—Last week's two completions in the Tinsley field in Yazoo County started off at 390 bbl. and 1,656 bbl., respectively, and four wildcats were started in Attala, Issequena, and Wilkinson counties and another will be drilled in De Soto County. Two wells have been started in Yazoo County close to the completed wells. Leasing parties are at work in many counties.

Completions in All Fields

(Week Ended October 28, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	49	10	4	63	2,668	2,997
Ohio	5	9	7	21	831	814
Indiana	10	2	4	16	267	101
Kentucky	4	1	5	10	568	743
Illinois	63	3	8	74	2,969	1,470
Michigan	31	2	8	41	1,190	754
Kansas	22	4	7	33	1,080	1,350
Oklahoma	12	2	8	22	1,443	1,438
Texas:						
North Central Texas	46	1	23	70	1,969	2,624
West Texas	40	0	2	42	1,556	1,639
Texas Panhandle	9	1	1	11	342	475
East Texas	3	0	0	3	344	1,546
East Central Texas	0	0	3	3	228	295
East Texas Border	0	0	0	0	59	117
Gulf Coast Texas	17	2	2	21	1,096	1,105
Southwest Texas	27	2	10	39	1,854	1,793
Total Texas	142	6	41	189	7,448	9,594
North Louisiana	7	2	1	10	430	537
Gulf Coast Louisiana	13	0	4	17	552	402
Total Louisiana	20	2	5	27	982	939
Arkansas	4	0	3	7	214	204
Montana	2	0	1	3	135	91
Wyoming	3	0	1	4	109	133
Colorado	0	0	1	1	13	10
New Mexico	13	0	2	15	486	466
Utah	0	0	0	0	0	2
California	15	0	4	19	773	1,078
Total United States	395	41	109	545	21,176	22,184
Total previous week	360	39	122	521		
Week ended Oct. 29, 1938	392	41	113	546		

Outstanding Fields—Highlights

(Week Ended October 28, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	30	37	10	7,370	1,159	29,650
Wasson-Bennett	21	72	15	15,121	483	17,125
Ector County	12	55	11	14,997	1,895	49,250
Pecos County	10	26	3	312	1,205	33,325
Jones County	6	7	4	2,430	577	8,000
East Texas	5	15	3	206	26,111	.....
OKLAHOMA						
St. Louis	5	28	4	595	895	31,100
KANSAS						
Barton County	4	16	3	1,110	493	16,065
Ellis County	3	16	3	1,575	439	11,415
Rice County	5	22	0	0	1,377	32,430
Russell County	4	23	5	2,170	1,340	28,632
NEW MEXICO						
Lea County	14	53	7	2,287	2,278	102,780
Eddy County	16	57	6	2,480	440	11,250
LA-ARK-TEX						
Cotton Valley, La. (deep)	1	5	1	430	145	10,105
Magnolia, Ark.	1	10	2	784	71	15,880
MICHIGAN						
Freeman-Redding	4	16	3	3,794	122	13,418
Kent County	9	39	16	7,710	183	10,259
CALIFORNIA						
Wilmington	4	18	0	0	722	85,350
ILLINOIS						
Salem	11	90	9	3,360	1,374	188,850
Louden	10	91	20	5,651	1,165	71,025
Other basin fields	28	266	34	10,573	1,790	70,055
Old fields	....	.....	....	.....	.....	8,825

Illinois, Indiana and Kentucky

By STAFF CORRESPONDENT

Production Up to 338,755 Barrels; Louden's Increase

CENTRALIA, Ill., Oct. 30.—Crude oil production in Illinois increased 13,489 bbl. per day in the past week, rising to 338,755 bbl. per day of which Salem contributed 188,850 bbl.; Louden, 71,025 bbl.; other basin fields 70,055 bbl. and the old fields 8,825 bbl. The increase in the Louden field was particularly noticeable as in the previous week production there was given as 62,796 bbl., indicating a gain of 8,229 bbl. a day.

The most closely watched well in the state at this writing is Kingwood Oil Co.'s deep test in the Salem area in Marion County. It is No. 1 Shanafelt in Section 20-2n-2e. At last report it was at a total depth of 3,502 ft., but the company was preparing to make a test of the Devonian lime which had been topped at 3,345 ft. There had been no showing of production in the Devonian and the test was to be made to prove whether or not it would produce commercially. No attempt had been made to produce the upper pays, as the well was drilled primarily to test out the lower levels.

Three quarters of a mile east and north of where Shell Oil Co., Inc., found production in the Benoist sand, Tom Beaty abandoned No. 1 Dukes, NE NE NW Section 17-3n-1e at 1,509 ft., after coring dry Benoist sand topped at 1,487 ft. The Shell's well, No. 1 Lutz, NW NW SE Section 18-3n-1e, was being plugged back to Benoist sand for completion. Shell was abandoning a wildcat in Washington County which had been drilled to the Devonian lime where it found no production. It is No. 1 Ragan, SW SW SE Section 25-2s-1e. It topped Devonian lime at 3,739 ft. and was bottomed at 3,937 ft.

There were 74 wells completed in the state in the past week in review of which 63 were oil wells, 3 gas wells and 8 dry holes. Ninety new operations were started which keeps field work ahead of completed work, a condition that has prevailed for several weeks.

Twenty wells in the Louden field in Fayette County produced 5,651 bbl. initially; 9 in the Salem field in Marion County, produced 3,360 bbl.; 4 in the Sandoval Devonian-lime pool, 5,860 bbl., and 2 in the Tonti pool, 415 bbl. The Sandoval and Tonti pools are in Marion County. Other counties and their oil completions and initial production were Richland, 2 wells, 454 bbl.; Clay, 7 wells, 1,441 bbl.; St. Clair, 2 wells, 40 bbl.; Wayne, 4 wells, 896 bbl.; Wabash, 7 wells, 861 bbl.; Washington, 2 wells, 186 bbl.; Edwards, 1 well, 200 bbl.; White, 2 wells, 220 bbl. Three gas wells were completed in Lawrence County and the 8 dry holes were distributed in 6 counties, 3 in Wabash and 1 each in McDonough, Clark, Marion, Wayne and White.

The 90 new operations reported were as follows by counties: Cook 1, Lee 1, McDonough 1, Schuyler 1, Cumberland 1, Fayette 30, Montgomery 1, Bond 2, Richland 4, Marion 23, Clay 4, Wayne 3, Lawrence 2, Wabash 7, Edwards 1, Washington 4, White 2, Hamilton 1 and Gallatin 1.

J. L. Hassett of Casey, Ill., reports his No. 1 Ingersol, NW SW SE Section 29-11n-14w, Clark County, which was recently shot with 90 qt. at a plugged-back total of 1,058 ft., will be tubed this week and that, in his opinion, it will make a 25 or 30-bbl. well. This operation had been erroneously reported as a dry hole belonging to Patmin Production Co.

Following were the completions of the week with their initial production which represents 24 hours unless otherwise stated:

In McDonough County DeKalb Syndicate's No. 2 Hartsock, NW NW SE Section 14-4n-4w of fourth principal meridian, plugged and abandoned at 100 ft.

In Clark County Trenton Rock Oil Co.'s No. 1 Black, C SE NW Section 14-11n-14w, top of Trenton lime at 2,598 ft., total depth 2,732 ft., dry and abandoned.

Fayette County

Jarvis Brothers' No. 12 Yakey, C W½ NW SE Section 6-7n-3e, Louden field, shot with 30 qt. in Cypress sand at 1,466-82 ft., pumped 100 bbl. W. B. Johnson's No. 3 Stewart, NW cor. Section 6-7n-3e, Cypress sand at 1,546-66 ft., shot with 50 qt., pumped 50 bbl. Union Products Petroleum Co.'s No. 6 Arnold, 650 ft. from north and 200 ft. from east lines of NW SW Section 8-7n-3e, Bethel sand at 1,568 ft., shot with 20 qt., pumped 180 bbl. Union Products' No. 7 Arnold, SE NW SW Section 8-7n-3e, Bethel sand at 1,572-90 ft., shot with 30 qt., pumped 180 bbl. Shell Oil Co., Inc.'s No. 4 Von Buening, SW NE NW Section 28-7n-3e, Cypress sand at 1,573-82 ft., shot with 3 qt., pumped 56 bbl. of oil and 3 bbl. of water. Nash & Redwine's No. 2 Sealock, NE cor. Section 24-7n-2e, Cypress at 1,549-59 ft., shot with 15 qt., pumped 140 bbl. of oil and 2 bbl. of water. Carter Oil Co.'s No. 14 Hobbs, SW NE NE Section 6-

Indiana's Ten New Oil Wells Have Low Average Initial

EVANSVILLE, Ind., Oct. 30.—There were 16 wells completed in Indiana in the week in review, of which 10 were oil wells averaging 123.7 bbl. in initial production, 2 were gas wells and 4 were dry. Sixteen new operations were started. Following is the record of the week:

In Spencer County Damron Brothers' No. 2 Wright, C SE SE Section 19-7s-6w, is a 10,000,000-cu. ft. gas well completed in sand at 897-905 ft. R. E. Cope and others' No. 1 Varner, NE cor. SW¼ Section 24-6s-5w, total depth 1,061 ft., plugged back to 1,015 ft., acidized with 3,000 gal., pumped 20 bbl. of oil and 12 bbl. of water. Sunshine Oil Co.'s No. 1 Trent, NE SW SE Section 11-5s-6w, Ste. Genevieve lime at 1,180 ft., small oil showing at 1,251 ft., abandoned as dry at 1,318 ft.

In Gibson County D. & H. Drilling Co.'s No. 1 Sipp, SE NW SE Section 24-3s-9w, was dry and abandoned at 1,240 ft., tight sand at 943-69 ft., with a showing of oil. Hollandsworth & Bander's No. 20 Cooper, SE cor. NE NW NE Section 24-3s-14w, shot with 20 qt. in Waltersburg sand at 1,078-96 ft., started at 40 bbl. on the pump. Hollandsworth and others' No. 2 Cooper, NW NE SE Section 24-3s-14w, pumped 250 bbl. initially from Waltersburg sand at 2,074-2,100 ft. Same operators' No. 1 Cooper, SE cor. NW SE NE Section 24-3s-14w, pumped 215 bbl. initially from Waltersburg at 2,084-2,104 ft. J. E. Amis, Jr.'s No. 3 Cooper, SW cor. NE NE Section 24-3s-14w, pumped 115 bbl. from Waltersburg at 2,084-99 ft. Midwest Oil Co. completed No. 3 Endell, SE SW SW Section 23-2s-9w, as a 75-bbl. pumper from sand at 1,467-78 ft. Midwest's No. 1 Bryant, SW NW NE Section 15-2s-9w, pumped 42 bbl. in 6 hours and was completed in Weiler sand at 1,344-62 ft.

Near Completions

In Gibson County Lewis Production Co.'s No. 5 Cooper D, NE NE NW Section 13-3s-14w, which was not yet a completion, was estimated good for 150 bbl. per day. Tar Springs sand was topped at 2,123 ft. at which depth 5½-in. casing was set. It was cored to 2,139 ft. when this report was made. Lane Gray and others' No. 1 McCarthy, NW SE NW Section 13-2s-11w, was drilled to 2,200 ft., but was plugged back to 1,821 ft. It may be abandoned.

In Posey County C. W. McKeehan and others' No. 1 Keck, NW NW NW Section 35-3s-14w, had sand at 2,492-2,503 ft., and flowed 300 bbl. per day. Haynes & Thomas' No. 3 Seifert, SE cor. NW NW SE Section 19-6s-12w, had 3,000,000 cu. ft. of gas from sand at 370-76 ft., and was completed. Roberts Brothers' No. 1 Keck, NW NE NW Section 34-3s-14w, pumps 150 bbl. per day from pay at 2,781-99 ft. The crew will clean out. It is not a completion.

In Vanderburg County Illinois Oil Co. and others' No. 1 Keck, NW NE SW Section 6-7s-11w, was dry and abandoned at 1,823 ft. Tar Springs and Waltersburg sands were absent.

In Warrick County Hoosier Drilling Co.'s No. 1 Baum, SW SE NW Section 9-6s-7w, was abandoned at 1,630 ft. Ste. Genevieve lime was topped at 1,495 ft.

In Pike County Murphy Oil Co.'s No. 8 Stewart, C NW NW Section 26-14-9w, was shot with 60 qt. in sand at 942-68 ft., and is a 30-bbl. pumper, completed.

New Operations

New work started in the state during the week in review included the following:

Spencer County: Damron Brothers' No. 1 Bumpass, C NW SE Section 19-7s-6w, rigging up machine. Edward Lorch's No. 1 fee, 1,020 ft. from south and 700 ft. from west lines of NW¼ Section 12-6s-4w, drilling at 766 ft.

Vanderburg County: Volkman and others' No. 1 Heldt, C E½ NE SW Section 18-7s-11w, rigging up rotary.

Gibson County: Joe Bander and others' No. 24 Cooper, SE cor. SW NE NE Section 24-3s-14w, drilling at 1,760 ft. Bander and others' No. 25 Cooper, NE cor. SW NE NE Section 24-3s-14w, 905 ft. from north and 835 ft. from east lines of NE¼ Section 24-3s-14w, set 10-in. pipe at 129 ft. Hollandsworth and others' No. 3 Cooper, 1,155 ft. from south and 495 ft. from east lines of NE¼ Section 24-3s-14w; rig up. J. E. Amis, Jr.'s No. 5 Cooper, 25 ft. from north and 1,155 ft. from east lines of NE¼ Section 24-3s-14w, drilling at 1,150 ft. Papoose Oil Co.'s No. 1 Cooper C, 212 ft. from north and 2,851 ft. from east lines of SW¼ Section 18-3s-13w, location. Midwest's No. 4 Sampley, C S½ NW SW Section 23-2s-9w, saturated sand at 1,454-62 ft., set 6⅝-in. casing at 1,454 ft. Hollandsworth & Bander's No. 19 Cooper, NW cor. Section 19-3s-13w, was cleaning out after a 20-qt. shot at 2,513-28 ft., which yielded an estimated 50-bbl. showing. Pappoose Oil Co.'s No. 2 Cooper B, SE SE SW Section 12-3s-14w, was drilling at 2,785 ft. Cypress sand had been topped at 2,491 ft. Hollandsworth & Bander's No. 18 Cooper, SE cor. NW SE Section 12-3s-14w, was shut down for orders at 2,508 ft. Hulman and others' No. 1 Hollis, 330 ft. from south and 350 ft. from east lines of NW¼ (corrected location), was rigging up standard tools.

Dubois County: Damron Brothers' No. 3 Humbert, NE SW SW Section 25-1s-4w, drilling at 380 ft.

Posey County: Hollandsworth Brothers' No. 1 Keck, 221 ft. from east and 150 ft. from south lines of NE NW Section 34-3s-14w, set 10-in. casing at 141 ft. Superior Oil Co.'s No. 1 Mumford Realty Co., 1,650 ft. from north and 2,970 ft. from east lines of Section 31-3s-13w, drilling at 435 ft.

7n-3e, total depth 1,567 ft., shot with 15 qt. and 40 qt., swabbed 556 bbl. of oil and 75,000 cu. ft. of gas. Carter's No. 2 M. Taylor, NW NE SW Section 12-8n-3e, Cypress at 1,488-1,530 ft., shot with 20 qt., swabbed 272 bbl. of oil and 50,000 cu. ft. of gas. Carter's No. 4 T. Wright, SE SE SE Section 20-8n-3e, Cypress sand at 1,424-53 ft., Paint Creek and Bethel sand at 1,502-63 ft., shot with 80 qt., flowed 114 bbl. of oil and 500.000 cu. ft. of gas. Carter's No. 3 Boles, SW SW SW Section 21-8n-3e, Paint Creek sand at 1,472-1,509 ft., shot with 40 qt., flowed 144 bbl. J. P. Babcock's No. 2 Rhodes, SE SE SE Section 27-8n-3e, Cypress at 1,506-28 ft., Paint Creek at 1,555-84 ft., shot with 35 qt., pumped 125 bbl. Carter Oil Co.'s No. 4 Durbin, NW SW SW Section 27-8n-3e, Cypress at 1,498-1,537 ft., shot with 30 qt., flowed 360 bbl. of oil and 100,000 cu. ft. of gas. Carter's No. 2 Fortner, SW NW SW Section 27-8n-3e, Cypress at 1,493-1,537 ft., shot with 20 qt. at 1,512-20 ft., flowed 468 bbl. of oil and 75,000 cu. ft. of gas. Carter's No. 2 Zetsche, SE NE SE Section 28-8n-3e, Cypress at 1,454-77 ft., Paint Creek at 1,489-1,520 ft., shot with 50 qt. and 20 qt., flowed 348 bbl. of oil and 150,000 cu. ft. of gas.

Carter's No. 2 Kimbrill, NW SE SW Section 29-8n-3e, Cypress sand at 1,442-68 ft. and 1,505-21 ft., swabbed 36 bbl. of oil and 25,000 cu. ft. of gas. Carter's No. 3 Raymond C-64, NE SE NE Section 29-8n-3e, Cypress at 1,391-1,434 ft., and Bethel at 1,496-1,543 ft., flowed 578 bbl. of oil and 100,000 cu. ft. of gas. Jarvis' No. 3 Sinclair, NW NW NE Section 28-8n-3e, old total depth 1,479 ft., deepened to 1,506 ft., shot with 30 qt., pumped 100 bbl. Bethel sand was topped at 1,483 ft.

Jarvis Brothers' No. 16 Sinclair, NW NE NW Section 29-8n-3e, Bethel topped at 1,498 ft., total depth 1,537 ft., shot with 50 qt., pumped 150 bbl. Magnolia Petroleum Co.'s No. 7 Buzzard, C E½ SW NE Section 29-8n-3e, Cypress at 1,381-1,401 ft., shot with 15 qt., pumped 216 bbl. Carter Oil Co.'s No. 11 Ireland, SE SW NE Section 32-8n-3e, total depth 1,583 ft., shot with 50 qt. and 30 qt., flowed 762 bbl. of oil and 100,000 cu. ft. of gas. Carter's No. 6 Terry, NE NW SE Section 32-8n-3e, total depth 1,574 ft., shot with 60 qt., 40 qt., and 40 qt., flowed 816 bbl. of oil and 100,000 cu. ft. of gas.

In Lawrence County Kentucky Natural Gas Co.'s No. 1 Anderson, C NW SW Section 17-4n-10w, Buchanan sand at 1,056-73 ft., 1,500,000 cu. ft. of gas. Kesl and others' No. 4 Gray, SE cor. NE NW Section 18-4n-10w, Buchanan sand at 1,082-1,108 ft., pay at 1,117½-20 ft., 2,750,000 cu. ft. of gas. Kentucky Natural Gas Co.'s No. 1 Carpenter, NE SE SW Section 18-4n-10w, gas sand at 1,142-43 ft., 1,000,000 cu. ft. of gas and 40 bbl. of water.

In Richland County Pure Oil Co.'s No. 2 M. Jorgenson A, NE SE NW Section 23-4n-9e, Cypress sand at 2,609-37 ft., pumped 20 bbl. Pure Oil Co.'s No. 20 Coen, NW NW SW Section 4-3n-9w, Cypress sand at 2,580-82 ft., total depth, pumped 434 bbl.

Marion County

In Marion County, Tonti pool, Absher & Booth's No. 1 Branch, SE SE SW Section 33-3n-2e, total depth 2,165 ft., plugged back to 2,159 ft., pumped 75 bbl. of oil and 75 bbl. of water. In the Salem pool Ohio Oil Co.'s No. 13 M. J. Young, SW SE NW Section 20-2n-2e, pays from 1,974 ft. to 2,038 ft., at intervals, flowed 118 bbl. Ohio's No. 25 Young heirs, SE SW SW Section 20-2n-2e, pays at 2,028-78 ft., at intervals, flowed 201 bbl. Texas Co.'s No. 1 Sweeney, SE SW NW Section 20-2n-2e, McClosky pays at 2,023-82 ft., at intervals, flowed 52 bbl. in 3 hours, rated at 364 bbl. a day. Magnolia Petroleum Co.'s No. 63 Young, SE NW SW Section 21-2n-2e, McClosky at 1,987-2,037 ft., acidized with 3,000 gal., pumped 121 bbl. Magnolia's No. 23 S. Shanafelt A, SE SE SW Section 29-2n-2e, McClosky lime at 1,889-2,954 ft., at intervals, acidized with 3,000 gal., pumped and flowed 1,320 bbl. Ohio Oil Co.'s No. 12 M. J. Young, NW NE NW Section 29-2n-2e, McClosky at 1,961-70 ft., flowed 687 bbl. in 24 hours.

In the south end of the Salem field Texas Co.'s No. 11 W. Frederick B, SE SE NE Section 8-1n-2e, Benoist sand at 1,834-65 ft., pumped 175 bbl. Rockhill's No. 17 Foster, SE SW SW Section 8-1n-2e, McClosky lime at 2,045-78 ft., flowed 340 bbl. Texas Co.'s No. 7 E. Farthing, C SE NW SE Section 4-1n-2e, Benoist 1,860-83 ft., pumped 126 bbl. Steel's No. 1 Foster, NW SW SW Section 11-1n-2e, dry and abandoned at 2,277 ft.

In Marion County Shell Oil Co., Inc.'s No. 4-B Young heirs, SW NE SE Section 20-2n-2e, pay at 1,793-1,810 ft. and 1,829-62 ft., flowed 212 bbl.

"Devonian Completions

In the Sandoval pool, Marion County, Southwestern Oil & Gas Co.'s No. 22-A Benoist, NE NE NE Section 8-2n-1e, had Devonian-lime pay at 2,957½-59½ ft., and flowed 2,060 bbl. of oil, with no water. Same company's No. 24 Benoist, SW cor. NE NW Section 8-2n-1e, Devonian-lime pay at 2,932-38 ft., flowed 1,440 bbl. with some water. Southwestern's No. 25 Benoist, SW cor. NE Section 8-2n-1e, Devonian-lime pay at 2,942½-44½ ft., flowed an estimated 1,400 bbl. per day with some water. Big Four Oil & Gas Co.'s No. 2 Dean, SE SW SW Section 4-2n-1e, Devonian pay at 2,980½-81 ft., acidized with 100 gal., flowed 960 bbl. of oil and no water.

Clay County

In Clay County Sanders and others' No. 4 Gill, SW SE NW Section 18-2n-8e, Fredonia lime at 3,004-50 ft., flowed 250 bbl. Pure Oil Co.'s No. 12 Leon Clark, SW Cor. NW¼ Section 8-2n-8e, Fredonia lime at 2,985-3,042 ft., acidized with 10,000 gal., flowed 239 bbl. Pure Oil Co.'s No. 11 Sol Smith B, SE cor. NW¼ Section 7-2n-8e, pay at 2,995-88 ft., 2,998-3,000 ft., and 3,032-45 ft., acidized with 1,000 gal., flowed 235 bbl. Pure Oil Co.'s No. 9 Clay City Banking Co., C E½ SW SE Section 6-2n-8e, Fredonia pay at 3,032-55 ft. and 3,124-27 ft., flowed 516 bbl. Pure Oil Co.'s No. 3 Hubble, C W½ NW NE Section 9-1n-8e, pay at 3,035-45 ft., acidized with 5,000 gal., pumped 88 bbl. of oil and 72 bbl. of water. Pure's No. 3 Miller A, C W½ NE SW Section 4-1n-8e, Fredonia pay at intervals from 3,017 to 3,088 ft., acidized with 5,000 gal., pumped 110 bbl. Pure's No. 2 Johnson SW SE SE Section 4-1n-8e, Fredonia at 3,045-3,100 ft., acidized with 3,000 gal. and 5,000 gal., pumped 3 bbl. of oil and 5 bbl. of water.

In St. Clair County T. D. Crittenden's No. 1 Klatz, NE NE NE Section 35-1n-10w, Trenton lime at 464-69 ft., pumped 10 bbl. of oil and 10 bbl. of water. Carey's No. 1 Pulsie, in the Prairie-Dupo field, Trenton lime at 551-77 ft., pumped 30 bbl. of oil and 30 bbl. of water.

In Jefferson County Carter Oil Co.'s No. 2 Cora Copple, NE NE SW Section 4-1s-2e, Bethel sand, shot with 10 qt. at 1,955-57 ft., pumped 90 bbl.

In Wayne County Davis' No. 4 Sprague, NE NE SE Section 33-1s-7e, pay at 3,274-78 ft., flowed 191 bbl. in 9 hours. Carl Robinson and others' No. 5 Felix, NE NE NE Section 35-2s-8e, pays at intervals from 3,367 ft. to 3,410 ft., flowed an estimated 500 bbl. Weinert's No. 10 Gregory, C E½ NE SW Section 28-2s-7e, acidized with 500 gal. at 3,329-38 ft., through perforations, pumped 35 bbl.

H. H. Weinert, Inc.'s No. 1 Curd, NW SW NE Section 29-3s-8e, Wayne County, total depth 3,401 ft., pipe perforated at 3,235-55 ft., pumped 170 bbl. of oil and 35 bbl. of water. Pryor & McIntosh's No. 1 Simpson, SW SW SE Section 10-3s-8e, dry and abandoned at 3,520 ft. Fredonia lime was topped at 3,430 ft.

Wabash County

In Wabash County Vickers Petroleum Co.'s No. 3 Bump, 332 ft. from north and 455 ft. from east lines, NE SW Section 9-2s-13w, Cypress sand 2,413-26 ft., shot with 15 qt., pumped 144 bbl. Tide Water Associated Oil Co.'s No. 3 Elkins, NE SE SE Section 30-2s-13w, Cypress sand at 2,499-63 ft., pumped 147 bbl. Continental Oil Co.'s No. 1 Williams, SW NE NE Section 17-2s-13w, Cypress sand at 2,393-2,403 ft., shot with 20 qt., pumped 105 bbl. Centralia Refining Co.'s No. 2 Coe, NE cor. NW¼ Section 16-2s-13w, Palestine sand at 1,828-44 ft., pumped 72 bbl. of 29-gravity oil. F. D. Walker's No. 1 Fitzgerald, Cypress sand at 2,438-56 ft., shot with 10 qt., 85 bbl. on pump. H. Fotiades' No. 1 Epler, SW cor. NW SE Section 9-2s-13w, Cypress sand at 2,421-45½ ft., shot with 15 qt., pumped 175 bbl. Continental Oil Co.'s No. 1 A. B. Schultz A, Cypress at 2,432-42 ft., pumped 133 bbl. Centralia Refining Co.'s No. 2 Keensburg cemetery, SW cor. NW SW Section 9-2s-13w, dry and abandoned. Cypress sand was at 2,458-68½ ft. H. Fotaides' No. 1 Shultz, N ENE NE Section 8-2s-13w, dry and abandoned at 2,904 ft. Benoist sand was topped at 2,608 ft.

In Wabash County Delta Drilling Co.'s No. 1 McKendree, NW NE NE Section 6-3s-13w, was dry and abandoned at 2,887 ft., after an acid treatment in McClosky at 2,839-41 ft.

In Washington County Shell Oil Co., Inc.'s No. 6 Sharkowski, NE NW NW Section 23-3s-3w, shot with 14 qt. at 1,266-87 ft., pumped 32 bbl. Ohio Oil Co.'s No. 2 Kozuszek, SW NW SW Section 23-3s-3w, shot with 10 qt. and 4 qt. at 1,274-88 ft., pumped 54 bbl. of oil and 8 bbl. of water. Magnolia Petroleum Co.'s No. 9 Kuswickki, SE SE SE Section 15-3s-3w, Benoist sand at 1,228-63 ft., shot with 16 qt., pumped 100 bbl.

In Edwards County Howell & Politis' No. 2 Broster A, NW NW NE Section 3-3s-14w, Cypress sand at 2,606-10 ft., pumped 9 bbl. of fluid per hour, 3 per cent water.

In White County Chisom's No. 1 Boultinghouse, C W½ SW SW Section 10-4s-14w, shot with 60 qt. at 2,753-65 ft., Bethel sand, dry and abandoned at 2,769 ft. Superior Oil Co.'s No. 2 Ford and others, SW NW NE Section 9-5s-14w, total depth 3,074 ft., Fredonia lime topped at 2,912 ft., alloy casing at 2,131-41 ft. (Waltersburg sand) was removed. Well flowed 200 bbl. of oil through ¼-in. choke. Sun Oil Co.'s No. 1 Garver, SW SE SW Section 1-5s-10e, is a 20-bbl. well at 3,010 ft., total depth. It was shot with 15 qt. at 2,942-50 ft.

In Marion County Absher & Both's No. 1-B McMakin, SW SW SW Section 34-3n-2e, Benoist sand top at 1,932 ft., total depth 1,946 ft., pumped 340 bbl. of oil in 24 hours.

New Wildcat Operations

Among the 88 new operations listed were the following wildcats:

In Cook County, of which Chicago is the county seat, Crane and others' No. 1 Wulf, NW NW NE Section 2-42n-12e, topped Niagara lime at 104 ft., and set 6-in. casing. The crew was working to shut off water at 210 ft. It is being drilled with rotary.

In Lee County E. L. Otto's No. 1 Barnes, NW cor. NE SW Section 6-19n-10e, set 8-in. casing at 45 ft. and shut down.

In McDonough County Charles Measley's No. 1 Cummings, 200 ft. from north and 1,370 ft. from east lines, Section 21-4n-4w, was drilling.

In Schuyler County Harry M. Miller's No. 1 Wilson, 45 ft. from south and 990 ft. from east lines of SW NE Section 2-3n-3w of fourth principal meridian, drilling at 105 ft.

In Cumberland County Union Products Oil Co.'s No. 1 Cox, C W½ NW NE Section 29-9n-9e, drilling at 1,880 ft. A core taken at 1,590-1,608 ft. showed only water.

In Bond County Bond Oil Co.'s (formerly reported J. E. Huppard and others') No. 1 Dresser, 430 ft. from north and 1,758 ft. from west lines of NW¼ Section 21-6n-4w, an old well deepened from 1,842 ft. to 1,849 ft., found pay at 1,848½-49 ft. Storage was built and pumping equipment is installed. Operator estimates the well will pump 60 bbl. per day, with a small amount of water. It is said the hole filled 1,100 ft. with oil in 3 hours. Bond Oil Co. (Frank DeMayo) was building derrick for No. 1 Vogel, 430 ft. from north and 1,296 ft. from west lines of NW¼ Section 21-6n-4w.

In Marion County John Sappington's No. 1 Austin, NE NE NW Section 22-2n-1e, rig up for a Devonian test.

In Clay County Carl Robinson's No. 1 Orville Bryant, NE SE NE Section 7-2n-5e, rigging up rotary.

In Lawrence County American Bell Oil Co.'s No. 1 Wright, NW NW NW Section 15-2n-13w, rigging up.

In Wabash County Marvel Oil Co.'s No. 1 Beall, NE NW SW Section 11-2s-13w, set 10-in. casing at 110 ft.

In White County Carl Michael's No. 1 C. O. Myers, SE SE SW Section 32-4s-9e, moving in machine. Eason Oil Co.'s No. 1 Hughes, 330 ft. from north and 261 ft. from east lines of NW¼ Section 19-4s-14w, rigging up rotary.

In Hamilton County Robinson's No. 1 R. and W. Porter, SW SE SW Section 17-7s-7e, moving in machine.

Among the Outposts

In Edgar County Sanders & Walton's No. 2 Weaver, NW SW NW Section 24-14n-14w, drilling at 185 ft. A. Myers' No. 1 Schneider's No. 1 Schneider, SE SE NW Section 29-13n-13w, drilling at 1,457 ft. Morris Yeager's No. 1 Hannah, NW NW NW Section 11-12n-13w, drilling at 1,030 ft.

In Coles County East Oakland Syndicate's No. 1 Temple, SW cor. SE NE Section 36-14n-10e, total depth estimated at 2,200 ft. (mystery well), ran liner and waiting for cement to set. Daugherty & Dunn's No. 1 Mitchell, NE cor. SE NE SW Section 24-11n-10e, total depth 520 ft., waiting for sand line.

In Clark County W. R. Miller's No. 1 Booth, SE NE NW Section 17-11n-14w, fishing for tools, total depth 2,462 ft. W. R. Miller's No. 1 Pinnell, SE NW SE Section 6-11n-14w, testing at 492 ft. F. D. Strickler's No. 1 McFarland, NW NE SW Section 19-10n-13w, drilling below 1,900 ft.

In Fayette County Turner's No. 1 Hoagland, NW NW SW Section 14-9n-4e, total depth 1,565 ft., cleaning out. Max Conry's No. 1 Bert Smith, NE cor. NW Section 6-5n-3e, drilling at 620 ft.

In Richland County Pure Oil Co.'s No. 1 Clark, SW SW SW Section 31-5n-10e, set 8⅝-in. casing at 360 ft. Mammoth Producing & Refining Co.'s No. 1 Johnoff,

(Continued on Page 84)

WRAPPING PIPE before lowering into trench. The clean, smooth surface of NATIONAL Seamless is ideal for coatings and wrappings for bad soil conditions.

FIELD WELDING—This welder is joining two 8" sections of NATIONAL Seamless Line Pipe. The beveled ends furnished for welded lines are smooth and accurately cut. The uniform metal results in better joints and permits the welder to complete more jobs per day.

HERE, STRETCHING INTO THE DISTANCE as far as the eye can see, NATIONAL Seamless crosses a wide plateau, en route to Salt Lake City. NATIONAL Seamless is a favorite with pipe line engineers because it is easily handled, readily joined and laid with a minimum of time and labor.

A 438-MILE

"Walls Without Welds" will carry 8400 Barrels of Crude Oil a day across the Great Divide

FROM Fort Laramie to Salt Lake City, across some of the most mountainous regions of America, a great new pipe line is being laid. A line made up entirely of NATIONAL Seamless Pipe. 438 miles of "Walls Without Welds."

This line will set two noteworthy records. It will be the longest to be laid since 1930—and the first major oil line to cross the Great Divide. 8400 barrels of crude oil a day are expected to pour through it, transported more economically from field to refinery. Coming within 24 miles of crossing the entire state of Wyoming, it is in short distance of every oil field in eastern and southern Wyoming and northwestern Colorado.

Technical experts agree that NATIONAL Seamless is the logical choice for lines like this, that demand absolute dependability. A section of NATIONAL Seamless Pipe is a balanced, homogeneous unit, pierced and rolled from a solid billet of steel, with no longitudinal line of potential weakness. To serve economically for many years on vital jobs like this, line pipe must possess the strength to withstand unexpected pressures and stresses. Wall strength must be uniform throughout. Lengths must be straight and provide ample ductility for easy bending. That is why, on so many important projects, NATIONAL Seamless Line Pipe is usually specified.

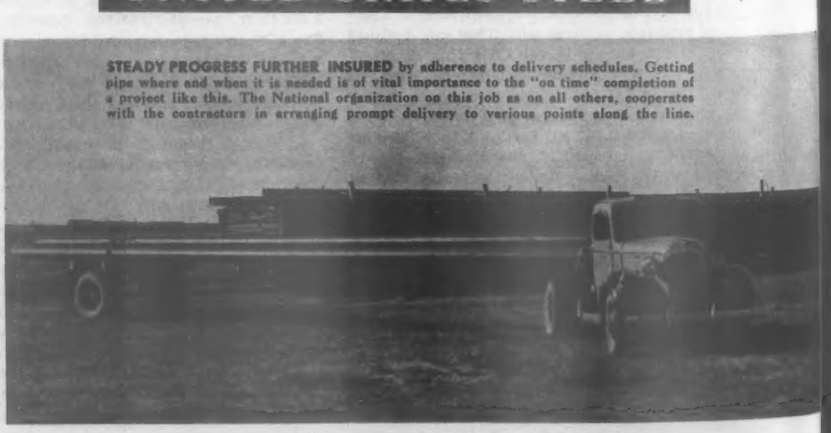
On your next job depend on NATIONAL Seamless to save time, labor and money. There's a nation-wide trend toward this pipe for oil, gas, and gasoline lines.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

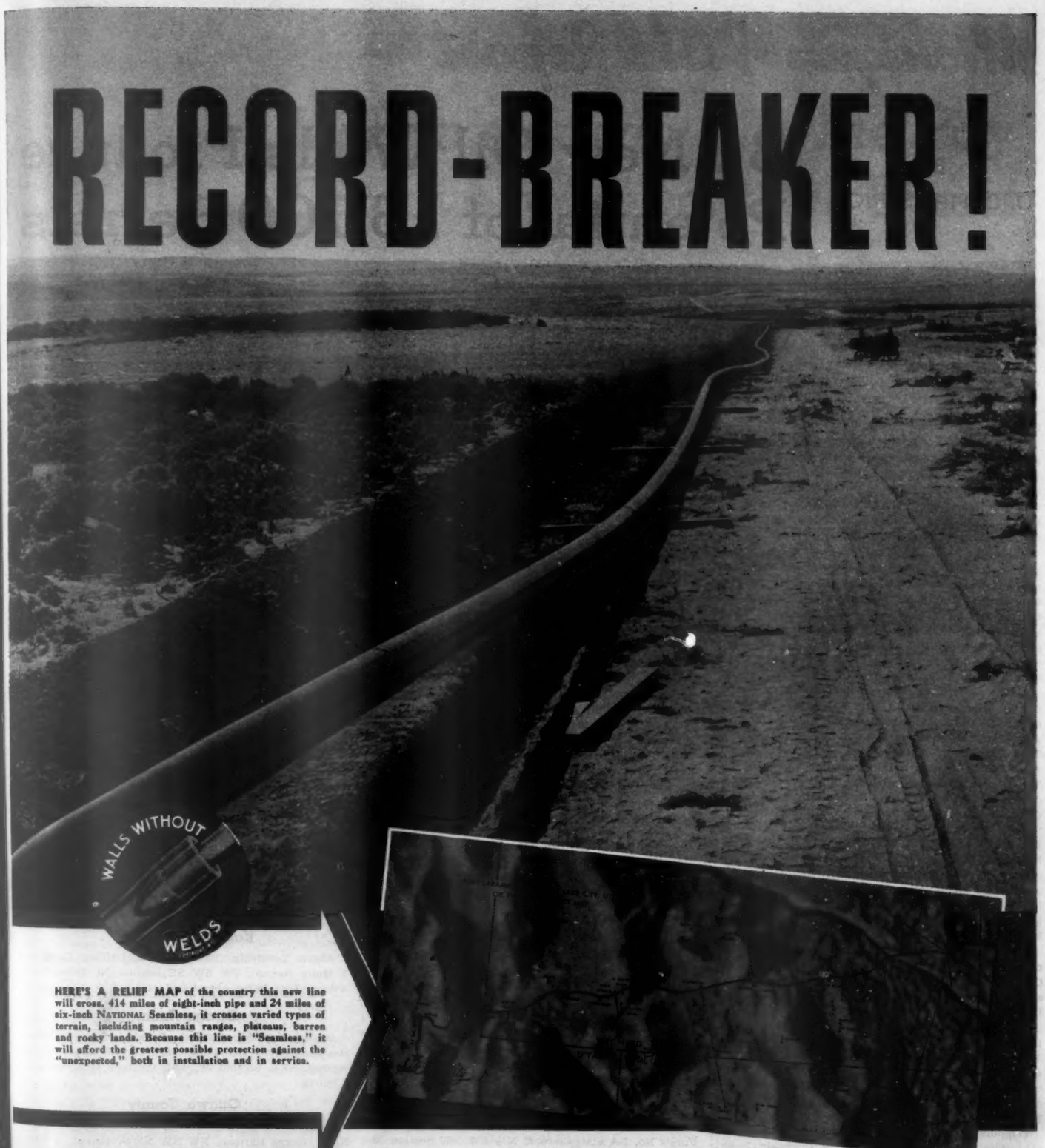
United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL



STEADY PROGRESS FURTHER INSURED by adherence to delivery schedules. Getting pipe where and when it is needed is of vital importance to the "on time" completion of a project like this. The National organization on this job as on all others, cooperates with the contractors in arranging prompt delivery to various points along the line.

RECORD-BREAKER!



HERE'S A RELIEF MAP of the country this new line will cross. 414 miles of eight-inch pipe and 24 miles of six-inch NATIONAL Seamless, it crosses varied types of terrain, including mountain ranges, plateaus, barren and rocky lands. Because this line is "Seamless," it will afford the greatest possible protection against the "unexpected," both in installation and in service.

NATIONAL SEAMLESS

Michigan Field Report

By
O. C. PRESSPRICH

31 New Oil Wells Produce Potential of 15,700 Barrels

SAGINAW, Mich., Oct. 30.—Michigan oil development pushed ahead last week at a record clip, activity featuring a moderately productive discovery well, a record number of new oil wells and an increase of 15,700 bbl. in the state's potential daily production.

The wildcat producer promised to restore some measure of interest to the dwindling Van Buren area. The well, which rated 35 bbl. a day after getting acid treatment, is R. T. & E. Corp.'s No. 1 J. J. Theisen in Section 18 of Porter Township, 4s-13w.

For the entire state the week's completion record listed 31 new oil wells ranging in initial potential from 10 bbl. to 2,640 bbl. In addition, two new gas wells added 14,500,000 cu. ft. to daily possibilities of the natural gas fields. Eight dry holes were reported. One location was abandoned and drillers temporarily abandoned activity on three other tests.

Kent County's Walker field enjoyed its best week as 16 new wells were completed. Development in that area also assumed added importance as the result of four new producers in the Tallmadge Township section of Ottawa County, three of them being better than any heretofore completed there. In Central Michigan the Redding field of Clare County led with three big wells, while there were four moderate-sized wells in Allegan County, two more in Isabella County.

On the western edge of the play in Tallmadge, Gordon Oil Co. brought in No. 1 M. P. and A. E. Heyboer, in Section 25-7n-13w, for the best producer in the township. An acid treatment developed a potential of 70 bbl. an hour. Another well in the same section rated 700 bbl. a day, a third was good for 1,560 bbl. The fourth Tallmadge producer, good for 100 bbl. a day, is in Section 36, while in Section 16 Gordon Oil Co. abandoned a well that failed to show.

New production in Walker Township was concentrated in four sections, 29, 30, 32 and 33. Best of the lot was James E. Flanigan's No. 1 Howard A. Taft, Section 33, with natural daily potential of 2,640 bbl. Another good one was Smith Petroleum Co. and others' No. 2 Julia O'Sullivan in Section 30, good for 1,060 bbl. a day, naturally. Others in the area ranged from 60 bbl. to 700 bbl.

Development in Allegan County included producer completions in the new Salem field as Black Rock Oil Co.'s No. 2 Kipen rated 156 bbl. a day after an acid treatment, while Voorhees Drilling Co.'s No. 2 Loew was good for 194 bbl. McKenna Oil Co. abandoned a wildcat test in Ganges Township, 2n-16w, Daily Crude Oil Co. chalked up a failure in Manlius Township, 3n-15w, J. K. Martin had a similar disappointment in Saugatuck Township, 3n-16w, and Smith Petroleum Co.-Bridger Basin Oil Corp. decided against proceeding with a scheduled test in Monterey Township, 3n-13w.

Temporary abandonment was indicated for a wildcat test in Calhoun County's Marshall Township, 2s-6w, as Mar-Cal Development Co. halted activities in No. 1 Woods, Section 13, which gave little promise at a depth of better than 2,000 ft. In Kalamazoo County Twin Drilling Co. abandoned a wildcat in Alamo Township.

While Ottawa's Tallmadge was assuming greater importance during the week, Daily Crude Oil Co. abandoned a wildcat in Polkton Township, Section 11-8n-14w. In Wright Township, 8n-13w, Twin Drilling Co. abandoned No. 1 Wright. A test in Otsego County's Bagley Township, 30n-3w, was temporarily abandoned, as was Blood & Hendershott's No. 3 Westcott in Van Buren's Bangor Township, 2s-16w.

Completion of McClanahan Oil Co.'s No. 2 Nixon in Section 17 of Isabella County's Wise Township, 16n-3w, indicated at least a quarter-mile extension to the northern end of the pool. Completed at 3,705 ft., the well was good for 345 bbl. a day after acid treatment. On the western edge of the county, in Sherman Township, 15n-6w, W. R. Borough, Inc.'s No. 1 William Walch, a semiwildcat, completed at 3,280 ft., is good for 50 bbl. a day.

New permits gave assurance that the Kent-Ottawa area will continue to get the big play in development. Of the 33 state Conservation Department permits announced last week 15 were for Kent County, 12 in Walker Township, 3 in Wyoming, 4 were in Tallmadge Township of Ottawa County. Six others were listed for Allegan County, three for Van Buren, one each for Monroe, Muskegon, Clare, Isabella and Cass counties.

Following is a summary of the past week's completions:

Allegan County

Ganges Township (2n-16w)—McKenna Oil Co.'s No. 1 Albert Madejczyk, wildcat, SW NW NW Section 36, was abandoned as dry at 1,263 ft.

Manlius Township (3n-15w)—Daily Crude Oil Co.'s No. 1 H. Lamoreaux, NW NW NW Section 8, was abandoned as dry at 1,461 ft.

Monterey Township (3n-13w)—Smith Petroleum Co. and Bridger Basin Oil Corp. abandoned location for No. 1 R. D. Brower, SE NE NW Section 14.

Salem Township (4n-13w)—Voorhees Drilling Co.'s No. 2 Floyd Loew, SW SE SW Section 3, completed at a depth of 1,628 ft., was given acid treatment which increased production to a potential of 194 bbl. a day. Black Rock Oil Co.'s No. 2 Peter Kipen, NE SW NW Section 23, was rated 156 bbl. a day after acid treatment. Total depth is 1,588 ft.

Saugatuck Township (3n-16w)—A wildcat failure developed as J. K. Martin abandoned No. 1 Lortin, NW SE NW Section 12, after testing at 1,381 ft.

Calhoun County

Marshall Township (2s-6w)—Mar-Cal Development Co.'s exploration was temporarily stopped at 2,013 ft. The test is No. 1 Andrew Woods, SW SW SE Section 13.

Clare County

Freeman Township (18n-6w)—Taggart Brothers, Inc., completed two natural-gas wells in Section 14. No. 19 L. R. Perkins, C NE¼, total depth 1,513½ ft., produced 4,290,000 cu. ft. a day, while No. 20 Perkins, C NW¼, total depth 1,485½ ft., got a production of 10,200,000 cu. ft.

Redding Township (19n-6w)—While H. W. Peltier temporarily abandoned No. 1 George A. Myers, SW SW NE Section 22, three good wells were completed in the established area of the Redding field. Pure Oil Co.'s No. 4 State-Sparrow, C N½ NW SE Section 29, at 3,850 ft., had a natural daily potential of 454 bbl. Pure's No. 7-A State-Clare, C N½ SW NW Section 33, was rated at 1,660 bbl. a day, naturally, at depth of 3,887 ft. and American Drilling Co.'s No. 7 Ida N. Newcomer, C S½ NE NE Section 32, also was an excellent completion, its daily potential being 1,680 bbl., completion depth 3,891 ft.

Isabella County

Sherman Township (15n-6w)—W. R. Borough, Inc.'s No. 1 William Walch, SW SW NW Section 18, completed at 3,280 ft., was producing 50 bbl. a day after an acid treatment.

Wise Township (16n-3w)—McClanahan Oil Co.'s No. 2 Leo C. Nixon, SE NE SE Section 17, was rated at 345 bbl. daily after acid. Completion depth was 3,705 ft.

Kent County

Walker Township (6n-12w)—Smith Petroleum Co. and others' No. 6 William H. Gilbert estate, SE NE SW Section 4, completed at 1,832 ft., rated 120 bbl. a day, after acidizing.

Walker Township (7n-12w)—There were four producing completions in Section 29: Fisher-McCall Oil & Gas Corp. and others' No. 1 J. Bultema, C E½ SE NW, flowed at the daily rate of 432 bbl. after acid treatment, at 1,887 ft. Eugene Hilliard's No. 1 J. P. Coeling, SW SE SE, completed at 1,898 ft., was rated at 400 bbl. a day, naturally. Carl J. Westlund's No. 1 A. P. O'Brien and others, SE NE SE, total depth being 1,929 ft., after acidizing was good for 150 bbl. a day. H. C. Williams' No. 1 Jane Thurkettle, SE NE SW, rated 500 bbl., naturally, on completion at 1,888 ft. Activity was at a peak in Section 30, scene of seven new wells. Gordon Oil Co.-Bolger Oil Co.'s No. 1 Goodheart and others, NE SW NE, did 60 bbl. a day after an acid treatment, total depth 1,929 ft. Muskegon Development Co.'s No. 2 Albert Wirth, NW NE NW, after being acid treated, was good for 100 bbl. a day, total depth 1,933 ft. Smith Petroleum Co. and others' No. 4 Handley-O'Sullivan, NW NE SW, at 1,908 ft., rated 394 bbl. a day, naturally, while the same operators' No. 2 Julia O'Sullivan, NW NW SW, completed at 1,898 ft., had an initial production of 1,060 bbl., naturally. Gordon Oil Co.-Bolger Oil Co.'s No. 2 John Dykstra, C N½ S½ SE NE, at 1,916 ft., did 318 bbl. daily after an acid treatment. Production after acidizing was at the rate of 300 bbl. a day from Eastern Petroleum Co.'s No. 1 Terwein-Marcellus, SE SW NW, total depth 1,904 ft. C. E. Weller's No. 2-A Frank McKay, SE SE NW, completed at 1,914 ft. and acid treated had an initial production of 243 bbl. a day. Ide Oil & Gas Co.'s No. 1 George Burgess, NE NW NE Section 32, acidized, rated 60 bbl. a day, total depth 1,923 ft. Talbot Oil Co.'s No. 1 George Engelsma, NW NW NW Section 32, total depth 1,906 ft., recorded an initial daily production of 253 bbl. Ide & Glavin Development Corp.'s No. 4 J. A. Taalman, NW NW SE Section 33, acidized, rated 700 bbl. a day, total depth 1,925 ft. Biggest of all was the 2,640 bbl., naturally, which was the initial daily potential of James E. Flanigan's No. 1 Howard A. Taft, SE NW NW Section 33, completed at 1,854 ft.

Kalamazoo County

Alamo Township (1s-12w)—Twin Drilling Co.'s No. 1 Molly Neeson, SW SW SE Section 19, failed as a wildcat test, being abandoned at 1,341 ft.

Otsego County

Bagley Township (30n-3w)—Frank A. Summers, trustee, temporarily abandoned No. 1 Darling-Lyons estate, wildcat, SE¼ Section 28, with the hole at a depth of 1,799 ft.

Ottawa County

Polkton Township (8n-14w)—Daily Crude Oil Co.'s No. 1 George Herman, NW NW NE Section 11, a wildcat, failed and was abandoned at 2,304 ft.

Tallmadge Township (7n-13w)—Gordon Oil Co.'s No. 1 James C. Quinlan, SE SE SE Section 16, was dry and abandoned at 2,010 ft., but four other completions were recorded, two of them ranking with the larger wells of the Walker field, of which Tallmadge is an important extension. Twin Drilling Co.'s No. 1 Park Association, NE SE NE Section 25, acidized, and completed at 1,904 ft., had an initial of 1,560 bbl. a day. Even better was the 1,680-bbl. potential production, after acid treatment, from Gordon Oil Co.'s No. 1 M. P. and A. E. Heyboer, NW NE SE Section 25. Gaylord W. Norton, trustee's No. 1 Joseph Bjork, SE NW SE Section 25, acidized, rated 700 bbl. a day, completion depth being 1,865 ft. A 100-bbl. well was completed by M. L. Marx and H. R. Scherer's No. 1 Mary E. Shaw, NE SE NE Section 36, at total depth of 1,873 ft.

(Continued on Page 84)

North Louisiana, Arkansas

By GEORGE WEBER

Lisbon's Lower Marine Pay Discovery Important Event

SHREVEPORT, La., Oct. 28.—A section of saturated oil sand in the lower Marine formation, cored by a deep test in the Lisbon field, stands out as the week's most important development. The Lisbon Exploration Co.'s No. 1 Roberta Vaughn was still coring in the oil section at latest report. The first show of oil came while drilling above 8,816 ft., and it is believed that several feet of the section was drilled.

Operators did not wish to come out of the hole to put on a core bit because of the high pressure in the upper sands of the formation, which several days ago threatened to blow out. However, the oil showing persisted, and the first core from 8,816-28 ft. was fine porous saturated sand. Coring has continued, but results of the second core had not been learned. The discovery, which from all indications means another producing section in the lower Marine at Lisbon, is of considerable importance to the field.

Two other sands in the lower Marine have shown possibilities in this deep test. On a Schlumberger survey these sands were checked at 8,347-75 ft. and 8,449-55 ft. After finding these sands, it was decided that the test would be carried to a total depth of 9,000 ft. instead of the original 8,500-ft. contract level.

The deep test is being drilled by the specially formed company, which is supported by operators in the Lisbon field and interested parties in North Louisiana generally. The Lisbon field, a lower Glen Rose producing area, has seen little activity in the past year, due to overdrilling, declining pressure, and distress crude. The results of this deep test will do much to revive activity in the section. The No. 1 Roberta Vaughn was originally completed in the regular producing section of the field but was taken over by the cooperative company for the deep test of the lower Marine.

Elsewhere in North Louisiana drilling was routine, with the exception of the Waskom field in western Caddo Parish. There the Arkansas Louisiana Gas Co. has apparently extended the Pettit-lime gas production of the field 2 miles to the northeast. The No. 1 Bell, in the SW cor. Section 6-17-16, topped the Pettit lime of the lower Glen Rose formation at 5,629 ft., and on a drill-stem test at 5,627-77 ft. a 15,000,000-cu. ft. flow of gas was tested. Operators are coring ahead to explore the possibilities in the Travis Peak formation.

NORTH LOUISIANA COMPLETIONS

Caddo—Caddo Parish

J. W. Bailey's No. 1 Winston, Section 8-20-15, pumping 5 bbl. of oil and 50 bbl. of salt water, total depth 1,585 ft. Burton & Harlan's No. 1 Thompson, Section 1-20-16, pumping 82 bbl., total depth 1,552 ft. Homer Ferguson's No. 2 Pala, Section 1-20-16, pumping 100 bbl., total depth 1,568 ft. Ben F. French's No. 1 Greer, Section 1-20-16, pumping 25 bbl., total depth 1,565 ft. Joe G. Strahan's No. 2 Stiles, Section 29-21-16, pumping 38 bbl., total depth 2,400 ft. Tippett Oil Corp.'s No. 2 Bell, Section 34-22-16, dry and abandoned, total depth 2,528 ft. Waldron & Barnes' No. 2 Arkansas Fuel Oil Co., Section 1-20-16, pumping 20 bbl., total depth 1,572 ft.

Monroe—Morehouse Parish

Southern Carbon Co.'s No. 26 Tensas, Section 2-21-4, 2,000,000 cu. ft. of gas, rock pressure 840 lb., total depth 2,200 ft.

Monroe—Union Parish

Memphis Natural Gas Co.'s No. 3 Lankford, Section 7-22-3, 1,000,000 cu. ft. of gas, rock pressure 1,015 lb., total depth 2,198 ft.

Cotton Valley—Webster Parish

George Barham's No. 1 Bodcaw Lumber Co., Section 15-21-10, 431 bbl. of oil, ¼-in. choke, tubing pressure 537 lb., tubing set on packer, total depth 5,860 ft.

MISSISSIPPI

The Tinsley field of Yazoo County received another spurt of activity with the discovery last week of a second oil horizon. The Union Producing Co.'s No. 1 Stevens, north outpost, after missing the Woodruff zone, which is the Selma sand, topped an oil sand in the Eutaw horizon at 4,865 ft. The hole was carried to 4,877 ft., and a drill-stem test at 4,860-77 ft. showed a recovery of 2,900 ft. of 36-gravity oil in 11 minutes, using ⅝-in. chokes both top and bottom. The Eutaw sand corresponds to the Blossom sand which produces in several shallow fields in North Louisiana. After testing the oil horizon, operators cored ahead and at latest reports were coring in shale below 5,043 ft. without having found any further showings. The possibilities of finding producing sands in the Tuscaloosa and Lower Cretaceous horizons, within reach of the bit in that sector, are considered good.

Following the discovery of the second sand at Tinsley, interest in Tinsley and the Vicksburg-Jackson area of Mississippi generally became intense. Leasing is at a new peak in the state, and new wildcat locations are expected to increase over the next several weeks. The field, the first oil pool in Mississippi, has two new tests. Following completion of the Jones & O'Brien Brothers' No. 1 Stevens for an initial production gage of 1,656 bbl. in 24 hours through a ½-in. choke, the operators moved one location east for No. 2 Stevens, which they are rigging up.

The Union Producing Co. completed No. 1 Perry, south outpost, for an initial production of 390 bbl., and a later gage showed the well making 303 bbl. on a 12/64-in. choke with tubing pressure of 230 lb. and casing pressure of 170 lb. The rig from this well is being moved to the company's No. 1 Friley, southwest of the discovery. Yazoo Refinery, Inc.'s No. 1 Brooks, a 2-mile eastern outpost is rigging up in Section 17-10-2. The Union Producing Co. has two tentative locations south and southwest of production for which permits have not been applied. In the extreme north the Johnson Testing Tool interests are reported planning a location, but a permit has not been asked for.

Permits were issued for four wildcats in Arkansas by the state Oil and Gas Commission. In Attala County the Kosciusko Oil Co. will drill No. 1 Jones in Section 5-15n-9e, and the P. & M. Oil Co. will drill No. 1 J. A. McMillin in Section 26-13n-5e. Locke & Mellard have staked location in Issequena County for No. 1 Gary in Section 14-9n-6w, and a derrick is being moved into Wilkinson County to drill Louisiana Progress Oil Co.'s No. 1 A. M. Young in Section 40-4n-1e. A fifth wildcat is to be drilled in De Soto County near the Tennessee line, but permit has not been applied for. All of these tests are located on sizable blocks.

MISSISSIPPI COMPLETIONS

Tinsley—Yazoo County

Jones & O'Brien's No. 1 Jennie Stevens, C SW NE Section 13-10-3, 1,656 bbl., ½-in. choke, tubing pressure 210 lb., casing pressure 295 lb., total depth 4,520 ft. Union Producing Co.'s No. 1 S. E. Perry, C NW NW Section 24-10-3, 303 bbl. on 12/64-in. choke, tubing pressure 230 lb., casing pressure 170 lb., total depth 4,603 ft.

ARKANSAS FIELDS

An important wildcat for South Arkansas was staked in the vicinity of Junction City. The test, Barnsdall Oil Co.'s No. 1 W. M. Cameron, is in Section 36-19-17 on what is known as the Three Creeks block.

The Magnolia field may be defined on the northeast, due to the apparent failure of Atlantic Refining Co.'s No. 1-B Spain, C S½ NW SW Section 18-17-19. The test was drilling at latest reports below 7,630 ft. without a showing of oil in the Smackover lime. The water level in the porous lime section is established at —7,323 gt., and the elevation of the edge well shows that it is already at —7,305 ft.

ARKANSAS COMPLETIONS

Magnolia—Columbia County

Standard Oil Co. of Louisiana's No. 1 J. A. Foster, C SW NW Section 19-17-19, 384 bbl. through 11/32-in. choke, casing pressure 1,100 lb., tubing pressure 1,250 lb., total depth 7,594 ft. Standard Oil Co. of Louisiana's No. 1 Lewis, C NW NE Section 19-17-19, 400 bbl. on 10/64-in. choke, casing pressure 1,375 lb., tubing pressure 1,300 lb., 6-in. casing 7,495 ft., total depth 7,590 ft.

Wildcat—Lonoke County

W. L. Tedford's No. 1 Anderson, Section 7-4n-9w, dry and abandoned, total depth 1,500 ft.

Rodessa—Miller County

W. C. Feazel's No. 1 Norton, Section 18-20-27, 448 bbl. through 20/64-in. choke, tubing pressure 275 lb., tubing set on packer, porous lime 6,031-42 ft. and 6,070-82 ft., total depth 6,102 ft.

Production by Field

Estimated daily gross production all companies week ending October 27:

NORTH LOUISIANA

	Barrels
Bellevue	495
Caddo light	4,990
Caddo heavy	2,495
Converse	540
Cotton Valley light	*10,105
Cross Lake	4,650
De Soto and Red River	1,055
Elm Grove	295
Haynesville	2,760
Holly	90
Homer	2,765
Lisbon	5,690
Pleasant Hill	90
Rodessa	22,770
Sarepta-Carterville	†285
Sligo	1,240
Sugar Creek	270
Urania	2,535
Zwolle	2,600
Total	65,720

Texas side of Rodessa field 26,600.

SOUTH ARKANSAS

Atlanta	450
Buckner	2,325
Champagnolle	1,360
Dorcheat	270
El Dorado	1,650
Lewisville	1,245
Lisbon	225
Magnolia	15,880
Miller County	270
Nevada	550
Rodessa	3,000
Schuler	18,260
Smackover light	1,890
Smackover heavy	14,550
Stephens	500
Troy	1,310
Urbana	1,060
Village	1,080
Total	65,875

MISSISSIPPI

Tinsley	795

*2,730 bbl. is distillate.
†90 bbl. is distillate.

Schuler—Union County

Lion Oil Refining Co.'s No. 2 Calloway, Section 13-18-18, 768 bbl. through 1-in. choke, tubing pressure 100

(Continued on Page 77)

Oklahoma Operations

By DAL DALRYMPLE

Outpost North of Ramsey Has Viola Lime Structurally High

Exploration for oil reserves in Oklahoma continued to increase the past week, several new outpost tests being announced. Among the more interesting was one to be drilled northwest of Ardmore in Carter County at Waco F. Turner's No. 1 Smith, NE SW SE Section 16-3s-1w, east of the old Wheeler pool. Location is on a block of 2,500 acres. Leaseholders in the area include Lloyd Noble and the Gulf, Shell, Mid-Continent, Magnolia, Sinclair Prairie, Indian Territory and Ohio companies. It is to be a 3,500-ft. test, or to Springer or Hoxbar sands.

Work was started at a new wildcat in Cleveland County at W. A. Delaney and others' No. 1 Fortman, NW SW SW Section 12-7-2w, northwest of same operators' Bugher discovery well in the Noble area, recently abandoned as noncommercial.

Kirk-Green-Way, Inc.'s No. 1 Doran, NW NW SW Section 32-19-2e, north of the Ramsey pool, Payne County, was reported looking favorable for production as the crew drilled below 4,830 ft., headed for Wilcox sand. Viola lime was topped at 4,771 ft., checking 82 ft. higher than in a dry hole in Section 6-18-2e.

The Chickasha gas field in Grady County was given a third producing horizon at Sinclair Prairie Oil Co.'s No. 4 Charlson, NE NE SE Section 22-5-8w. A depleted gas producer at 2,398 ft., it was deepened to sand at 3,941-68 ft., total depth, when gas broke through while the crew was pulling drill pipe. It was shut in with large mastergate. Production was estimated at 15,000,000 cu. ft. of gas daily, or better. Operators were preparing to test. Other producing zones in the field are at about 2,300-2,400 ft. and 5,100 ft.

Wildcat Developments

Stanley Rogers and others' No. 1 Scott, NE SE NW Section 23-6-8, pool opener southeast of the Sasakwa area in Hughes County, was shot at 2,655-70 ft. in Booch sand and pumped 100 bbl. of oil and 15 bbl. of water in 24 hours; then pumped 38 bbl. of oil and 1 bbl. of water in the next 24 hours and was completed. Gravity of the oil was 36°. Booch sand was topped at 2,645 ft., total depth 2,675 ft., plugged back to 2,670 ft.

Burke-Greis Oil Co.'s No. 1 Johnson, NE SE NE Section 25-7-6, Seminole County wildcat, found Wilcox sand at 4,401 ft. and was dry and abandoned at 4,406 ft., total depth.

English Drilling Co.'s No. 1 Aetna, SE SE NE Section 26-3n-20w, wildcat north of the Altus field, Jackson County, lost the hole and was abandoned at 1,240 ft., total depth. Same operator was moving in machine at No. 1-A Aetna, SE SE NE Section 36-3n-20w, for a new test.

Other new wildcats included: Scarbrough's No. 1-B Ash, NE NE SE Section 7-4s-10w, Cotton County, moving in material for a 1,500-ft. test; McAlester's No. 1 Maddox, NW NE NW Section 6-9-5, northwest of Earlsboro, Pottawatomie County, cellar and pits.

LeFlore Electric & Gas Co. was drilling below 5,880 ft. at No. 1 Hickman, NE NE SE Section 8-8-25e, wildcat in LeFlore County. Eight-inch casing was set at 4,265 ft. Same company's No. 2 Hickman, C S½ S½ Section 8-8-25, was a machine.

Pottawatomie County

Deep Rock Oil Corp.'s No. 2 Miller, SW NE NE Section 32-7-4, St. Louis district, Pottawatomie County, topped dolomite at 4,189 ft., set 7-in. pipe at 4,216 ft., was bottomed at 4,310 ft., acidized and pumped 225 bbl. of oil and 2,400 bbl. of water in 24 hours.

Alcorn's No. 2 Rice, NE SE NE Section 32-7-4, pumped 352 bbl. of oil and 2,000 bbl. of water after acidizing and was completed. Top of dolomite was 4,195 ft., total depth 4,295 ft.

Clark's No. 1 Brown, NW SW NE Section 15-7-4, an old well, was plugged back from 4,291 ft. to 3,900 ft., perforated casing in Hunton lime at 3,713-3,890 ft., acidized and pumped 50 bbl. of oil and 40 bbl. of water in 24 hours.

Shaffer's No. 1 Marrs, C N½ SW NW Section 35-8-4, north side of the St. Louis district, was bottomed at 4,087 ft., set 7-in. casing at 3,815 ft., acidized in three stages and pumped 13 bbl. of oil and 9 bbl. of water in 24 hours.

Stephens' No. 1 Thorn, NW SE SE Section 36-8-4, was shot and acidized and pumped 5 bbl. of oil and 30 bbl. of water daily. It was bottomed at 4,277 ft. in shale. Seven-inch casing was set at 4,131 ft.

Same operator's No. 1 Sharp B, NW SW SW Section 6-6-5, southeast side of the St. Louis field, had Wilcox sand at 4,428 ft., total depth 4,473 ft., casing was perforated, water intruded and it was abandoned.

Atlantic Refining Co.'s No. 1 Walker, SE SE SW Section 4-5-5, topped Hunton lime at 2,572 ft., total depth 2,838 ft. in shale, plugged back and ripped casing but the hole filled with water and it was abandoned.

Amerada Petroleum Corp.'s No. 2 Mitchell, SE NE NE Section 3-6-4, an old well, was deepened from 4,283 ft. to 4,347 ft., plugged back to 4,272 ft., acidized and pumped 20 bbl. of oil and 660 bbl. of water daily. Dolomite was topped at 4,280 ft.

In the Gray area, Alma Oil Co.'s No. 1 Hudson, SE NE SE Section 24-6-4, had Earlsboro zone at 2,864 ft., sand 2,881 ft, total depth 2,930 ft., perforated casing and shot at 2,864-87 ft., and pumped 20 bbl. of oil daily.

Same company's No. 2 Hudson, NE NE SE Section 24-6-4, topped Earlsboro sand at 2,880 ft., total depth 2,946 ft., set 5-in. pipe at 2,860 ft., and flowed 135 bbl. of oil daily.

New work in Pottawatomie County: T. C. Iglehart's No. 2 Phillips A, SE NE NW Section 4-6-5, set 10-in. casing at 83 ft., waiting on cement; same operator's No. 1 Swan, SE NW SW Section 4-6-5, cellar; Patterson's No. 1 Mann, SW NE SW Section 19-6-5, rig on ground; Vierson's No. 1 Lehman, SW SW NW Section 19-6-5, cellar and pits; Alcorn's No. 3 Rice, NW SE NE Section 32-7-4, set 12-in. pipe at 90 ft., building rig; Deep Rock Oil Corp.'s No. 1 Michish, NW NW SW Section 36-10-4e, cellar and pits; Atlantic Refining Co.'s No. 2 Ne-Thah-Pea-Sea, C N½ SE NE Section 24-11-4, location.

T. C. Iglehart's No. 1 Curley, NE SE NW Section 4-6-5, southeast side of the St. Louis area, had dolomite at 4,120 ft., total depth 4,165 ft., was acidized and swabbed 330 bbl. of oil and 462 bbl. of water in 18 hours. It then pumped 140 bbl. of oil and 900 bbl. of water, but had not been completed. Mudge Oil Co.'s No. 3 Baptiste, SE NE NE Section 20-7-4, was shot in Earlsboro sand at 3,554-66 ft., total depth 3,569 ft., flowed 104 bbl. of oil in 16 hours and was shut in. Alma Oil Co.'s No. 4 Youts, NE SW SW Section 28-7-5, found dolomite at 4,083 ft., was bottomed at 4,112 ft., acidized and pumped 250 bbl. of oil and 100 bbl. of water daily.

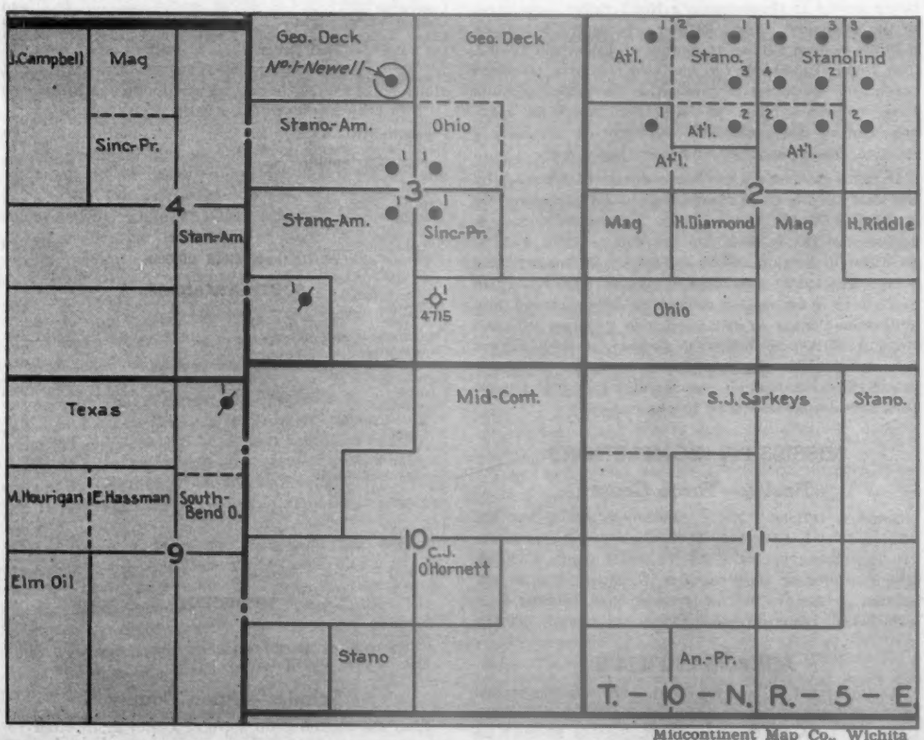
Seminole County

Winona Oil Co.'s No. 1 Davis, SE SE NW Section 6-6-8, Fish pool, Seminole County, topped Wilcox sand at 4,211 ft., was bottomed in sand at 4,225 ft., and flowed 421 bbl. of oil in 24 hours through tubing.

Superior Oil Co.'s No. 1 Treadway, NE SW SE Section 22-8-6, had Wilcox sand at 4,268-92 ft., total depth, the hole filled with water and it was abandoned.

Murray's No. 1 Harjo, NE SW NW Section 34-8-7, had Cromwell sand at 3,310 ft., total depth 3,366 ft., and it was dry and abandoned.

W. A. Villines' No. 1 Millsap, SE SW SW Section



Midcontinent Map Co., Wichita

George Deck extended the North Earlsboro pool in Seminole County northwestward at No. 1 Newell, SE NE NW Section 3-10-5, which found production in Wilcox sand

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Oil Stills	Vacuum Towers

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NEW YORK ..... 3347-165 Broadway Building
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23-7-5, an old well, perforated casing at 2,615-30 ft., total depth 2,927 ft., and was testing. Big Chief Drilling Co.'s No. 1 Collins, SE SE SW Section 12-6-5, had dug cellar and pits.

Kerlyn Oil Co.'s No. 1 Rainey, SW NE SE Section 35-10-5, Earlsboro area, topped first Wilcox sand at 4,210 ft., has second sand at 4,281-90 ft., total depth, plugged back and ripped casing at 4,031-35 ft., was acidized and flowed 160 bbl. of oil in the first 24 hours. It then flowed 187 bbl. in 24 hours, cutting 50 per cent water, and was being put on pump. Shepherd's No. 1-A Scroggins, NW NW SW Section 34-7-6, was shot at 2,765-2,805 ft., total depth 2,807 ft., and flowed 296 bbl. of oil the first 24 hours.

Pontotoc County

Phillips Petroleum Co.'s No. 3 Bates, SW NE NW Section 26-2n-7, Fitts district, Pontotoc County, an old well, was plugged back from 3,805 ft. to 3,175 ft., perforated casing at 3,010-3,114 ft., and produced 1,500,000 cu. ft. of gas daily. Cromwell sand was topped at 3,048 ft.

Continental Oil Co.'s No. 6 House, SE NW SE Section 1-1n-7, had dug cellar and pits. Minton's No. 1 Houston, NE SW NW Section 35-5-7, was rigging up machine.

Lincoln County

Wilcox Oil & Gas Co.'s No. 5 School Land, SW NW SE Section 16-14-6, Sac and Fox pool, Lincoln County, found Prue sand at 3,022-3,113 ft., total depth, was shot and pumped 50 bbl. of oil daily.

Same company's No. 5 School Land North, SW SW NE Section 16-14-6, was rigging up rotary.

Morgan-Gulf's No. 1 Vlasak, C N½ NE NW Section 2-12-5, Wilzetta area, had Hunton lime at 4,213 ft., total depth 4,224 ft., was acidized, flowed 1,618 bbl. of oil in 24 hours, cutting 25 per cent, and was being put on pump.

Creek County

Ferguson's No. 1-A Turner, NW SE SW Section 30-19-8, northeast corner of the Cushing district, Creek County, had Bartlesville sand at 2,746-69 ft., total depth 2,773 ft. in shale, and was dry and abandoned.

New operations in Creek County: Martin's No. 1 Hynd, SW SE SW Section 21-14-10, rigging up machine; Young's No. 1 Allen, CSL SW NE Section 1-15-9, location; Sinclair Prairie Oil Co.'s No. 39 Dacon, NW NE SE Section 16-17-7, location; Deep Rock Oil Corp.'s No. 5 Ferris, SE SE SW Section 17-18-7, an old well, cleaning out after deepening from 2,382 ft. to Bartlesville sand at 2,540-56 ft.; Jarrett's No. 1 Isles, NW SE NE Section 1-19-9, drilling below 1,200 ft.; Bryan Petroleum Co.'s No. 1 McClain A, SW NW NW Section 22-19-9, rigging up machine.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ended October 21, and for the preceding week was as follows:

	Barrels	
	Oct. 28	Oct. 21
Allen	5,750	5,775
Billings	5,975	5,975
Burbank	7,150	7,100
South Burbank	9,100	9,125
Balance Osage	17,700	17,700
Blackwell district	3,350	3,375
Bristow-Slick	6,450	6,500
Chandler	1,425	1,425
Crescent	2,675	2,650
Cromwell	3,075	3,025
Cushing-Shamrock	9,300	9,325
Duncan	3,775	3,775
Edmond	4,350	4,375
Fish	3,950	3,975
Fitts	23,425	20,325
Jesse	2,225	2,200
Graham-Fox	2,975	2,900
Gray	725	750
Healdton	9,325	9,300
Hewitt	3,825	3,825
Keokuk	3,350	3,375
Konawa	1,100	1,125
Lucien	8,300	8,325
Moore	2,775	2,750
Oklahoma City	95,425	104,100
Olympic	2,550	2,550
Ramsey	4,825	4,850
Sasakwa	1,150	1,175
Sholem-Alechem	2,725	2,700
Seminole district:		
Bowlegs	7,025	7,025
Carr City	2,325	2,300
Dora	2,950	2,925
Earlsboro	4,225	4,250
South Earlsboro	500	500
East Earlsboro	2,650	2,650
Little River	6,175	6,150
East Little River	725	725
Maud	625	625
Mission	1,275	1,250
Seminole	6,725	6,725
East Seminole	1,175	1,150
Searight	2,150	2,125
Total Seminole	38,525	38,400
St. Louis-Pearson	31,100	31,500
Tatums	1,725	1,750
Tonkawa-Garber-Thomas	3,850	3,875
Wewoka	1,725	1,725
Yale-Jennings	3,350	3,375
Other pools	90,500	90,125
Total Oklahoma	419,500	425,100

Stephens County

Kiester's No. 7 Jones, NW SW SE Section 23-1s-5w, Velma field, Stephens County, was shot in sand at 652-60 ft., total depth 663 ft., and pumped 3 bbl. of oil and 3 bbl. of water daily.

George Pace's No. 2-A Woodward, NW NW NE Section 14-2s-3w, spudded with rotary.

Logan County

Sinclair Prairie Oil Co.'s No. 4 Crews, NE NW NE Section 27-16-1e, Meridian pool, Logan County, had

(Continued on Page 80)

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TAPES — RULES — PRECISION TOOLS

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Wildcat Revival on Texas Side of the Two-State Area

HOUSTON, Tex., Oct. 30.—A new sand discovery on the south flank of the Darrow dome, Ascension Parish; testing of an important wildcat at the Barataria Bay prospect, Jefferson Parish, coastal Louisiana, and the announcement of six wildcat locations on the Texas side of the district, were the outstanding developments in the Gulf Coast area the past week.

Prolific production from a deep sand was opened on the south flank of the Darrow dome, Ascension Parish, when Humble Oil & Refining Co.'s No. 16 Gumbel was completed for an initial production of 682 bbl. per day, flowing through a ¼-in. choke. This well was drilled to a total depth of 8,450 ft., and completed through perforated casing at 8,259-61 ft.

On the Barataria Bay prospect, Jefferson Parish, California Co.'s No. 1 Adam Rutely, Section 2-16s-23e, was plugging back from a total depth of 12,222 ft. to approximately 8,400 ft., at which depth a protection string of casing was recently cemented after an electrical survey showed favorable indications in a sand section at around 8,200 ft. Details of the electrical log are not available, and it is not known where casing will be perforated.

13 New Starts

Wildcatting activities along the Texas coast showed another increase the past week as six more locations were made, making a total of 13 new operations in 2 weeks. This is by far the largest number of wildcats reported in the district in the same length of time in several months.

In Wharton County, in the Lane City area, Humble Oil & Refining Co. is moving in material for No. 1 L. B. Henry in the Napoleon B. Williams Survey. This will be the third well drilled on the prospect in the past few months. It is about 1 mile southeast of the company's No. 1 Rogers, an 8,000-ft. dry hole. Southwest of Wharton, J. F. Hutchins has derrick up for No. 1 A. P. Borden in the Euclid M. Cox Survey. The well is on a lease farmed out by Magnolia Petroleum Co. In the Spanish Camp area, Houston Oil Co. staked location for No. 1 H. W. Hinze in the Robert Kuykendall Survey.

In Fort Bend County, southwest of the town of Booth, Superior Oil Corp. is moving in for a projected 8,000-ft. Vicksburg test on the A. P. George lease in the Wiley Martin Survey.

In the College Point area, Matagorda County, Pure Oil Co. staked location for No. 1 J. L. Woodhouse, Lot 2, Turner-Rice Irrigation Co. subdivision in the Lewis DeMoss Survey. In Washington County, in the Chapel area, Sunray Oil Co.'s No. 1 Mrs. S. E. Lockhart is in the J. Kuykendall Survey and is scheduled to be drilled to the Tertiary Wilcox formation.

Dry Hole in Aldine

Another dry hole was apparently marked up for the Aldine field, Harris County, as Earl C. Hankamer and others' No. 1 O. P. Hairgraves was coring below 7,228 ft., with no showing reported. The 6,800-ft. discovery sand is reported to have carried salt water.

In the Martha field, Liberty County, Stanolind Oil & Gas Co.'s No. 1 Frank Charzan, 2,000 ft. southwest of production, is being recompleted after the well flowed 64 bbl. of fluid the first 6 hours, 50 per cent of which was oil and the balance drilling mud and salt water. The well was tested through a 5/32-in. choke under a tubing pressure of 1,110 lb. and casing pressure 1,150 lb. Oil sand was logged the previous week at 8,141-54 ft., and the perforations at 8,152-56 ft. were squeezed off, and the hole cemented back to 8,150 ft. Northeast of the discovery well, Pan American Production Co. made location for No. 1 Hutcheson in the Beasley Pruitt Survey. The acreage on which the well is located was recently purchased from Sun Oil Co. About 2,800 ft. west of the discovery well Stanolind Oil & Gas Co. is drilling below 2,000 ft. in No. 1 H. F. Tyrell, I.&G.N. Survey No. 7.

George Echols and others' No. 1 Broussard, south offset to the discovery well in the South China field, Jefferson County, cored oil sand at 7,878-86 ft., total depth, and 7-in. casing was cemented at 7,875 ft.

In the Francitas field, Jackson County, Skelly Oil Co.'s No. 1 Gertrude Kunover, south of production, was bottomed at 9,031 ft., and 7-in. casing cemented, preparatory to making a series of production tests at intervals from 7,000 to 7,950 ft.

Cotton Lake Test Draws Attention

Operators interested in the Cotton Lake area, Chambers County, were watching the results of a production test at J. R. Turnbull's No. 1 Kirby Petroleum Co., 2 miles northwest of the South Cotton Lake field. Sand and sandy shale showing oil and gas were cored at intervals from 6,370-6,431 ft. and 7-in. casing was cemented for a production test after two attempted drillstem tests failed.

In the east extension area of the South Cotton Lake field, Salt Dome Oil Corp.'s No. 2 Williams, cored sand showing oil and gas at 6,512-21 ft., total depth, and 5½-in. casing was cemented at 6,511 ft. The well is south of the company's No. 1 Williams, a gas and distillate producer. In the same area, Humble Oil & Refining Co.'s No. 1-C J. H. Casey was completed in sand at 6,460-92 ft. for an initial production of 6 bbl. per hour, flowing through a ¼-in. choke.

In the Cedar Bayou field in Galveston Bay, casing was perforated at 5,945-80 ft. in Standard Oil Co. of Texas' No. 24-118 State, and it flowed 20 bbl. per hour through a ⅛-in. choke under a tubing pressure of 1,920 lb. Due to the high gas-oil ratio the well has been killed and will be recompleted.

Glenn H. McCarthy's No. 1 Houston Farm & Development Co., discovery well of the Chocolate Bayou field, Brazoria County, has been recompleted through perforated casing at 9,864-74 ft., and on a 24-hour gage flowed 32 bbl. of distillate daily through a ⅛-in. choke. Tubing pressure was 1,750 lb.

Wilcox Well in Ace

In the Ace field, Polk County, Shell Oil Co., Inc., added another Tertiary Wilcox producer as No. 1 Kirby West Lumber Co. was completed for an initial production of 10 bbl. per hour, flowing through a ¼-in. choke under a tubing pressure of 75 lb. and casing pressure 575 lb. The hole is bottomed at 7,856 ft., and production was obtained by perforating casing at 7,828-54 ft.

An attempt to open production from a new sand in the Paradis field, St. Charles Parish, coastal Louisiana, was being made by Texas Co. as 7-in. casing was cemented on bottom at 10,497 ft. in No. 2 L. L. and E. Paradis, Section 6-14s-20e. This well missed the 9,800-ft. discovery sand, and will test a gas and distillate sand logged by an electrical survey approximately 300 ft. lower.

Busy Golden Meadows

Locations for seven more wells were announced in the Golden Meadows field as four oil wells and one dry hole were reported. The new locations included Boller & Rutledge's No. 1 Burger Cheramie, Section 12-19s-22e, S. Rhodes Nos. 1 and 2 Falgout Holding Co., in Section 12; Terouche Oil Co.'s No. 2 Cheramie, Section 12; Texas Co.'s Nos. 4 and 5 Falgout Holding Co., Section 9, and Texas Co.'s No. 4 L.L.&E. Golden Meadows in Section 78-19s-22e. The completed wells were St. Mary Oil Co.'s No. 1 Choust, completed in the 5,100-ft. sand with an initial production of 233 bbl. daily, flowing through a 7/64-in. choke, and Texas Co.'s No. 2 Falgout Holding Co. and No. 5 L.L.&E. Golden Meadows, which were completed in the 7,900-ft. sand for average producers. The company's No. 3 Falgout Holding Co. was completed in the 2,600-ft. sand for an initial production of 309 bbl. per day, flowing through a 7/64-in. choke. William Helis' No. 2 Gaspard and Regan, Section 9-19s-22e, was abandoned after an unsuccessful production test in the 2,700-ft. horizon.

Location for a deep test was made on the Little Chenier prospect, southern Cameron Parish, by Phillips Petroleum Co. for No. 1 Miami fee in Section 11-16s-6w. The well is midway between two dry holes drilled several months ago by the Humble Oil & Refining Co.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Manvel field: Texas Co.'s No. 21-A Belcher, perforated casing 5,380-90 ft., 315 bbl., ¼-in. choke.

Fort Bend County

Thompson field: H. M. Naylor's No. 1 Shanks, sand 7,840-72 ft., 935 bbl., ¼-in. choke. John Blaffer's No. 3 J. H. P. Davis, sand 5,398-5,420 ft., 530 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 14 Davis, sand 5,398-5,400 ft., 506 bbl., ¼-in. choke.

Galveston County

Dickinson field: Humble Oil & Refining Co.'s No. 7 Fream, 8,030 ft., 72 bbl., 7/64-in. choke.

Harris County

Bammel field: H. M. Harrell's No. 1 Lillian Polley, 6,265 ft., gas well. Clear Lake field: Humble Oil & Refining Co.'s No. 19-C Humble West, sand 5,900-06 ft., 125 bbl., ¼-in. choke. Friendswood field: Humble Oil & Refining Co.'s No. 31 Beamer, sand 6,036-47 ft., 552 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 5-B Godwin, sand 6,011-42 ft., 562 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 3 Keller, sand 6,033-46 ft., 515 bbl., ¼-in. choke.

Jefferson County

Lovells Lake field: Humble Oil & Refining Co.'s No. 6 Jefferson Land Co., sand 7,784-93 ft., 170 bbl., ⅛-in. choke. Spindletop field: Stanolind Oil & Gas Co.'s No. 153 McFaddin, 3,550 ft., dry and abandoned.

Liberty County

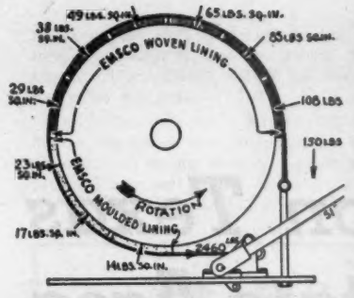
Hardin field: Woodley Petroleum Co.'s No. 1 Green, perforated casing 7,533-37 ft., 82 bbl., ¼-in. choke.

Polk County

Ace field: Shell Oil Co., Inc.'s No. 1 Kirby West Lumber Co., perforated casing 7,828-54 ft., 240 bbl., ¼-in. choke.

Wharton County

Louise field: Brazos Young Corp.'s No. 1 Jones, 6,566 ft., dry and abandoned. Magnet field: Humble Oil & Refining Co.'s No. 17 Cockburn, sand 5,528-43 ft., 681 bbl., ¼-in. choke. Withers field: Texas Co.'s No. 16 Broussard, sand 5,542-48 ft., 120 bbl., ¼-in. choke. Texas Co.'s No. 39-B Pierce, 5,545 ft., gas well. Texas Co.'s No. 40-B Pierce, sand 5,538-44 ft., 68 bbl., ⅛-in. choke. Texas Co.'s No. 64-C Pierce, 5,544 ft., 60 bbl., ⅛-in. choke. Texas Co.'s No. 14-A Thompson, sand 5,539-44 ft., 124 bbl., ⅛-in. choke.



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Among the Drilling

OLSON DRILLING CO., Tulsa, whose West Texas and New Mexico superintendent is R. P. Coats of Midland, Tex., has received the contract from General Crude Oil Co. and Bryce McCandless of San Antonio, for a new wildcat test to the Ellenburger of Ordovician about 2 miles south of the Apco pool in northern Pecos County, West Texas. The location falls in the south 160 acres of Section 5, Block 110, T.C. Survey. It is on land owned by Mrs. Virginia W. Crockett.

T. F. HUNTER, vice president of Hunter Oil Corp., Wichita Falls, Tex., has received the drilling contract from British American Oil Producing Co. for its recently staked wildcat in Baylor County, North Texas. With the location in the center of the west 235 acres of Section 194, T.&N.O. Survey, it will be the company's No. 1 C. E. Holeman. It is 2½ miles southwest of Maybelle and is on the old L. C. Heydrick block of 5,000 acres of which British American recently purchased 3,000 acres.

UNGREN & FRAZIER, Abilene, Tex., is drilling slowly ahead after completing a long delayed fishing job at the A. H. Tarver's No. 1 A. S. Barkley, deepest operation in West Central Texas. It is located about 4 miles northeast of Anson in Jones County and reported the top of the Ellenburger lime at 5,263 ft., below which point the contractor is drilling with spudder in a 5-in. hole. It is in Section 54, D.&D.A. Survey, and was started as a Palo Pinto-lime test, but when no Palo Pinto was encountered it was drilled deeper.

STONY MARTIN, drilling contractor of Pecos, Tex., has received the contract from Argo Oil Co. and was last reported running surface casing at that company's new west offset test to the West Lea Oil Co.'s (Frank M. Farley) No. 1 Texas Co.-State, new pool opener in west central Lea County, New Mexico. The Argo test offsets the discovery completed by Farley and associates last week for an approximate 1,000 bbl. daily. The location is in the C NE SW Section 16-20s-32e, on a structure recommended by Ronald K. DeFord, district geologist for Argo Oil Co. at Midland.

DELTA DRILLING CO., Shreveport, La., is moving in materials for one of East Central Texas' newest deep Trinity series wildcats. Test will be drilled for Shell Oil Co., Inc., and is in the Chapel Hill district of eastern Smith County. First announced as a location early last summer, the test will be No. 1 H. Campbell, northwest corner of Phillip Lively Survey. Contract calls for 9,500 ft., which is expected to carry the hole into the Travis Peak formation. The test is about 2⅛ miles northeast of Hunt Oil Co.'s No. 1 Bradley, Thomas Payne Survey, which opened a deep Glen Rose distillate area in June of 1938. Shell Oil Co., Inc., is backing two other deep tests, both being in Houston County and both contracted to 10,000 ft.

C. C. THRASHER, drilling contractor of Henderson, Tex., will drill a 2,700-ft. projected wildcat in Rusk County, Texas, for Marietta Corp. Location is on a block of 6,000 acres with location in the northwest corner of the Thomas Howeth Survey. It is ⅛ mile south of the Pinehill community.

CROW DRILLING CO. has spudded with portable rotary rig at E. F. Neely and others' No. 1 Shores, SE SE SE Section 12-60-37w, wildcat in Andrew County, Missouri. The portable rig is capable of drilling to 3,000 ft., contracted depth.

WARD McGINNIS, Eureka, Kans., drilling contractor, who has been active in the Forest City basin play in Missouri, was starting work at No. 1 Morgan, NW SE NW Section 7-24-12e, Greenwood County, Kansas, where he has drilled many producing wells.

IRON DRILLING CO., of Tulsa, has the contract for Republic Natural Gas Co.'s No. 1 Ridder, Section 31-10-17w, offsetting production in the Burnett pool, Rooks County, Kansas.

SIMPSON-NOBLE DRILLING CO. has contracted to drill Dwight & Wilson and others' No. 1 Duncan, C S½ SE NW Section 8-20-11w, wildcat ¾ mile west of the Ellinwood pool in Barton County, Kansas. It is east of the West Ellinwood pool and northeast of the Clawson pool. Rotary tools will be used. Contract depth is 3,300 ft. or Arbuckle lime.

FAIN DRILLING CO. is starting a new test in the Bornholdt pool, McPherson County, Kansas, at No. 1 Briggs, CWL SW NW Section 29-20-5w.

KIRK-GREEN-WAY, INC., and associates' No. 1 Doran, NW NW SW

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Contractors

Section 32-19-2e, north of the Ramsey pool, Payne County, Oklahoma, was checking high on top of Viola lime, and geologists believe it has a good chance to find production in Wilcox sand, expected around 4,845 ft.

EARL WAKEFIELD, Wichita, Kans., drilling contractor, and Continental Oil Co. have plugged and abandoned No. 1 Berridge, NW NW SW Section 8-9-17, wildcat in northeastern Kansas, at 2,980 ft. in Arbuckle lime.

CLAUDE DRILLING CO. was drilling below 4,000 ft. in Kansas City lime at No. 1 Petz, CWL SW SW Section 14-19-11w, outpost ½ mile east of the Lanterman pool in Ellis County, Kansas.

HELMERICH & PAYNE, INC., and others found deep-sand production in the Doyle pool, Stephens County, Oklahoma, at No. 1 Wade-B, NW NW SE Section 12-1n-5w, the well flowing 556 bbl. of oil in the first 24 hours from pay at 5,505-61 ft.

ZEB DRILLING CO. found oil-stained sand at 6,198-6,212 ft. in No. 1 Bath Highland, NW SW SE Section 26-12-3w, which will extend the play on the extreme east side of the Oklahoma City, Oklahoma, field if it is completed as a producer. It was reported checking high geologically.

NOBLE DRILLING CO. is preparing to make a production test at California Co.'s No. 1 Adams Rutely, a wildcat located on the Barataria Bay prospect, Jefferson Parish, coastal Louisiana. The well was drilled to a total depth of 12,220 ft., and the production test is expected to be made at approximately 8,200 ft.

GEORGE ECHOLS has cemented casing preparatory to testing Hebert & Smith's No. 1 Broussard, a south offset to the discovery well of the South China field, Jefferson County, Texas. Another operation is reported at the Allen dome, Brazoria County, for Titanic Oil Co.

GRAY & WOLF are moving a rig to the Chiltipin field, Duval County, Southwest Texas, for their No. 1 Tom Graham, a south offset to the discovery well.

DELTA DRILLING CO., of Shreveport, La., was given the contract for Shell Oil Co., Inc.'s No. 1 Campbell, a Smith County, Texas, wildcat in the Phillip Lively Survey. It is contracted to go to 9,500 ft.

JOE BURNHAM, of Shreveport, La., has the contract for Yazoo Refinery, Inc.'s No. 1 Brooks, a 2-mile-east outpost to the Tinsley field of Yazoo County, Mississippi. The test was to be spudded over the week end.

BOONE DRILLING CO., of Wichita Falls, Tex., has been given the contract for J. L. Duncan in De Soto County, North Mississippi. This test is located on a large block of acreage in that section, near the Tennessee State line.

Left to right: H. C. Griffith, Lon Cron, A. T. "Cap" McDannald, Al Buchanan, Otis Dyer, John Halliburton, and Mike Ledford. This group of well-known drilling contractors were the life of the party at a recent "White Wing" hunt in the Rio Grande Valley of Texas, given jointly by Halliburton Oil Well Cementing Co. and Brown Oil Tools, Inc. Approximately 100 men made the 3-day trip, transportation for which included 13 planes

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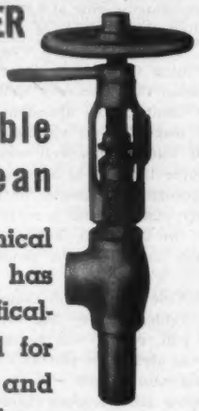

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Southwest Texas District

Distillate Pool Is Opened at Odem, San Patricio County

By
F. L. SINGLETON

CORPUS CHRISTI, Tex., Oct. 30.—The opening of distillate production in the Odem area, San Patricio County, and the testing of a new sand which promises to open crude production in the recently opened Cologne field, Victoria County, held the attention of operators in the Southwest Texas district the past week.

Seaboard Oil Corp.'s No. 1 M. C. Smith, west of the town of Odem and in the Juan Hart & Sons Survey, flowed at the rate of 144 bbl. of 51-gravity distillate per day through a ¼-in. choke under a working pressure of 2,275 lb. This well has been in the process of completion for several weeks, and an electrical survey showed possible sands. Production tests were made at 7,000 ft., 5,900 ft. and 5,300 ft., and final completion was made through perforated casing at 6,995-7,000 ft.

Houston Oil Co.'s No. 1 Ed Dietzel, south of the discovery well of the Cologne gas field, Victoria County, is bottomed at 5,171 ft., and 7-in. casing is being cemented preparatory to testing a sand section at 4,828-38 ft. where an electrical survey and side-wall cores identified the section as an oil-bearing horizon. This well was drilled deeper in search of a new sand after the 2,800-ft. gas sand was found to contain salt water. The new sand section is believed to be the Frio formation.

Location for two important tests were made in the county as Renwar Oil Corp. spudded No. 1 Stoner, a wildcat 6 miles northwest of Bloomington in the Diego Garcia Survey, and Stewart Boyle prepared to drill No. 1 Simon, approximately 2,000 ft. northwest of the Victoria field in the Victoria Four League grant.

A new producer for the Southland field, Duval County, was indicated as Hiawatha Oil & Gas Co.'s No. 3-A Southland Life Insurance Co., tested 500 ft. of pipeline oil and 165-lb. working pressure on a 17-minute drill-stem test at 5,353-65 ft., total depth. Seven-inch casing was cemented at 5,365 ft. The sand section in this well is slightly lower than the discovery well.

Standard Oil Co. of Texas' No. 1 Jack Casey, discovery well of the Sejita field, Duval County, has been completed as a distillate producer, and is shut in with tubing pressure of 2,175 lb. The well had an initial production of 10 bbl. of distillate and 2,500,000 cu. ft. of gas per day, flowing through ⅛-in. choke under a tubing pressure of 2,100 lb.

In the Seven Sisters field, Duval County, Wellington Oil Co.'s No. 2-G J. F. Welder opened gas production from the Yegua sand when it was completed as a gas well through perforated casing at 3,055-63 ft. Location is in the S. Alexander Survey No. 102.

Another dry hole loomed for the Magnolia City field, Jim Wells County, as Meyer's No. 2 Shear was drilling below 5,346 ft., and had failed to log any showings in the discovery horizon. In the same county and 1 mile southeast of the discovery well of the Wade City field, Rodney DeLange and others' No. 1 McNeil is testing through perforated casing at 4,789-92 ft. This well extended the field last week when it flowed distillate from perforated casing at 4,786-90 ft. The casing was reperforated in an attempt to increase production.

Gravis & Beuscher's No. 1 Mull, northeast of production in the East Alice field, Jim Wells County, is testing through perforated casing at 5,549-97 ft., and is reported to be showing for a high-pressure gas well. It is testing through a 7/32-in. choke and at the close of the week tubing pressure was 840 lb. and shut-in casing pressure 1,500 lb. This well is testing a deeper sand section which the previous week had shown pipeline oil on a drill-stem test.

In the Rincon field, Starr County, W. R. Davis & Co.'s No. 2-B Slick, an outpost in Survey No. 528, tested oil and salt water through perforated casing at 4,170-90 ft., and at the close of the week another test was being made at 4,173-79 ft. The same company's No. 3-B Slick is bottomed at 4,522 ft., and the crew is testing a new sand section at 3,840-46 ft. Sun Oil Co.'s No. 3 Speer, perforated casing at 4,966-74 ft., and flowed 228 bbl. of fluid with 5 bbl. of salt water through ⅛-in. choke. Working pressure was 1,300 lb.

Atlantic Refining Co.'s No. 1 American Rio Grande Land & Irrigation Co., discovery well of the Weslaco field, Hidalgo County, was abandoned after a series of production tests showed various amounts of distillate and salt water. This well was completed as a distillate producer in 1938, at approximately 8,400 ft., and was temporarily abandoned until several weeks ago. It has been rumored that a recycling plant would be constructed in the field, but production tests of the various gas and distillate sands were not encouraging.

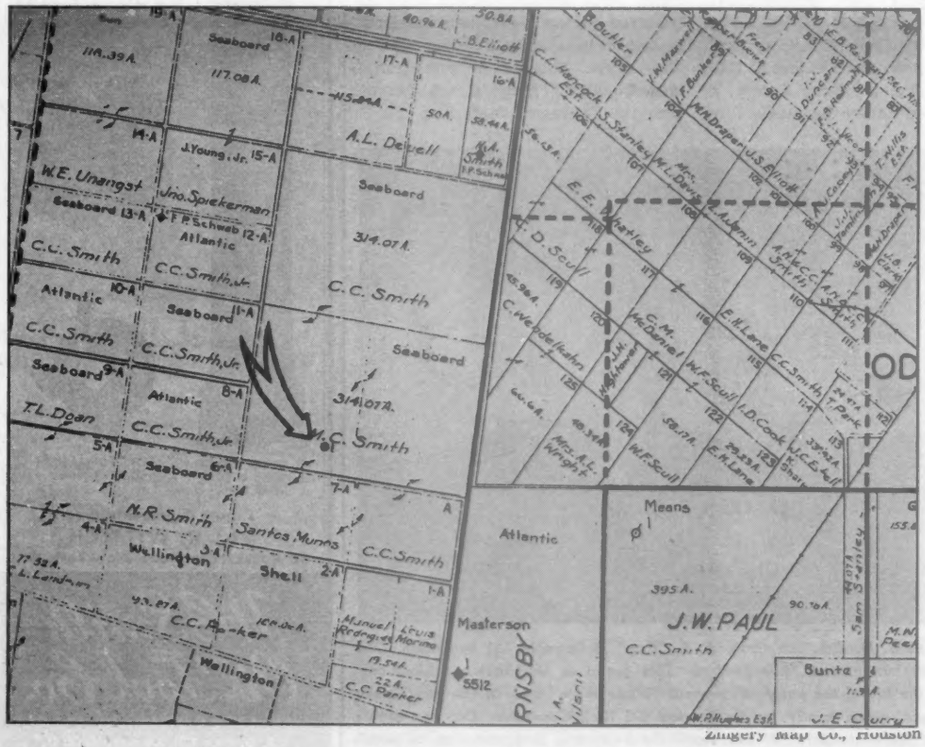
In the West Cole area, Webb County, V. G. Schimmel's No. 1-A Valdez, Survey No. 754, is bottomed at 2,353 ft., and 7-in. casing was cemented at 2,337 ft. after a 60-minute drill-stem test at 2,336-53 ft., tested 75 ft. of drilling mud and oil.

In the Riverside field, Nueces County, Stanolind Oil & Gas Co.'s No. 1 Thompson, southeast of production, is coring in below 5,215 ft. An electrical survey showed a sand section at 4,878-4,919 ft., and side-wall cores are reported to have shown saturation.

Along the Balcones Fault-line district, J. A. Tarver's No. 1 Florence Lamm, south of Losoya, Bexar County, cored broken shale with a showing of oil at 1,638-92 ft., the total depth, and preparations were being made for a production test.

In Caldwell County, Dr. J. F. Atha's No. 1 G. W. Carter, Gideon Pace Survey, pumped 12 bbl. of oil and 4 bbl. of water daily after the Edwards-lime section at 1,781-93 ft., was treated with acid.

An extension of 1½ miles was indicated for La Rosa field, Refugio County, late in the week as Morgan-Gulf Oil Corp.'s No. 1 Mabry Thomas logged sand with an oil show at 6,256-59 ft., and on an 18-minute drill-stem test developed 150 ft. of oil and 150 ft. of oily drilling mud. Working pressure built up to 20 lb.



Zingery Map Co., Houston

Seaboard Oil Corp.'s No. 1 M. C. Smith, which opened a new distillate field in the Odem area, San Patricio County

SOUTHWEST TEXAS COMPLETIONS

Aransas-San Patricio Counties

McCampbell field: Corgey & Grote's No. 1 Gustafson and Young, 7,150 ft., 91 bbl., 9/64-in. choke. Corgey & Grote's No. 9 McCampbell, 7,150 ft, 88 bbl., 9/64-in. choke.

Caldwell County

Dale field: H. H. Coffield's No. 7 Osteen, 2,195 ft., 40 bbl., pumping. Salt Flat field: Wiegand Brothers' No. 8-A Briscoe, 2,717 ft., 45 bbl., pumping.

Duval County

Hoffman field: Cox, Hamon and others' No. 17 Cuellar, 2,683 ft., 80 bbl., jetting. Lundell field: Government Wells Oil Co.'s No. 35 Lundell, sand 1,530-42 ft., 38 bbl., ¼-in. choke. Humble Oil & Refining Co.'s No. 15-B White, 1,536 ft., 61 bbl., ½-in. choke. S. R. C. field: Transwestern Oil Co.'s No. 30 Duval County Ranch Co., sand 1,045-51 ft., 24 bbl., pumping.

Guadalupe County

Darst Creek field: Humble Oil & Refining Co.'s No. 28-A Denman, 2,624 ft., 74 bbl., pumping.

Jim Hogg County

Kelsey field: Humble Oil & Refining Co.'s No. 16 Bass, 4,749 ft., 86 bbl., 7/64-in. choke. Humble Oil &

(Continued on Page 78)

North and East Texas

By
D. H. STORMONT

Hull-Silk May Be Extended; Eastern Texas Exploration

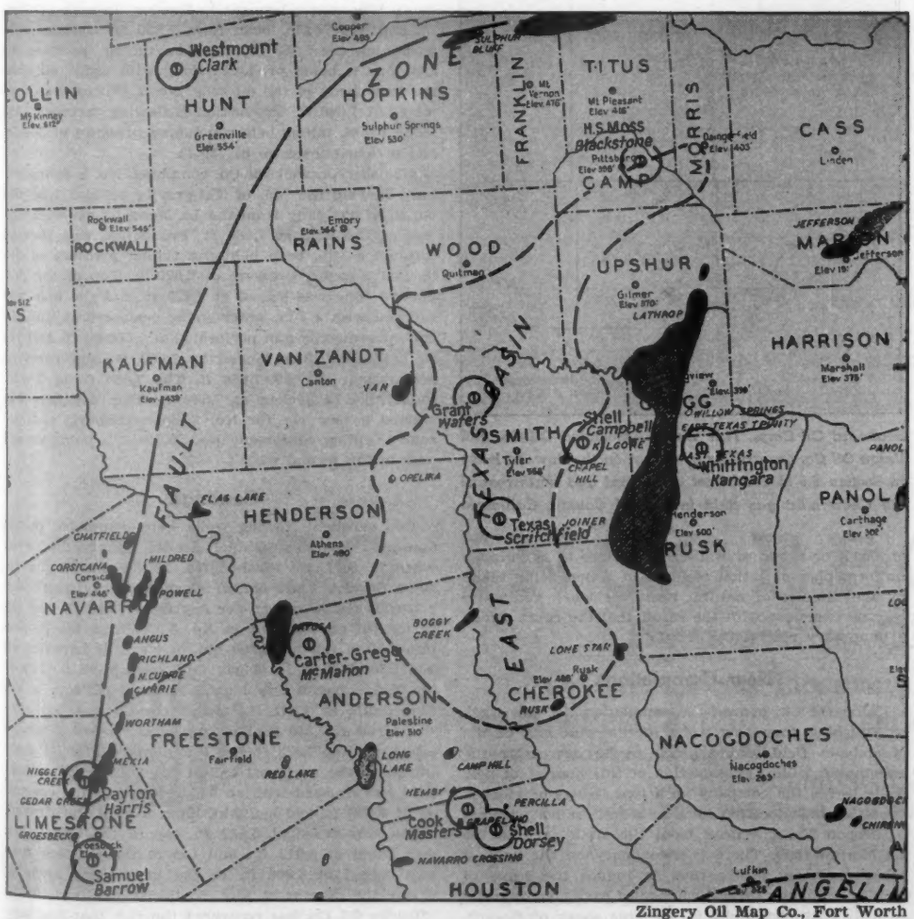
WICHITA FALLS, Tex., Oct. 30.—Archer County, most active in the North Texas district, for another week overshadowed other activity in the area. A possible half-mile-east extension to the Hull-Silk pool, several deep wildcats throughout the county, and a large proven-acreage sale in the Sikes pool, headed the activity in the county.

Prospects of an east extension to the Hull-Silk pool in northern Archer County were seen as the week closed when Chapman & McFarlin's No. 1-C Wilson, in Lot 1, Section 29, A.T.N.C.L. Survey, drilled sand showing oil at 3,834-40 ft. At last report the operators were preparing to make a drill-stem test. This is the first 3,800-ft. producing well for the field in several months. The majority of the development is projected to the 4,300-ft. level. The owners have not indicated whether the well will be completed in the present horizon, or drilled ahead to the 4,300-ft. level.

Two deep tests in Archer County were drilling ahead while a third and deep offset to the Caddo-lime discovery well south of Mankins was preparing to test. The latter well is the British American Oil Producing Co.'s No. 1 Hunter & Eddleman, a location west of the discovery, and in the McKinney & Williams Survey. Casing has been set at 4,682 ft. on top of the Caddo lime. The well is correlated about 24 ft. lower than the discovery well. Near Anarene, in the south part of Archer County and southwest of Archer City, Hamilton's No. 5 Graham, in the Abercrombie Survey, is drilling below 5,050 ft., seeking showings of oil found at 5,100 ft. in the Hamilton deep test a mile northeast. The showings of oil are thought to be in a detrital zone at the base of the Pennsylvanian. Four miles west of Anarene Perkins & Cullum's No. 183 G.C.S.L., Block 21, F.C.S.L. Survey, is drilling below 4,727 ft. and seeking the Ellenburger. The test reported the top of the Bend at 4,688 ft. with showings of oil at 4,692-98 ft.

In Montague County's two oil pools opened within the year, the Rogers & Rogers pool and the Benton-Holmes pool, deeper producing horizons were reported in outpost wells. Thomas E. Nix's No. 1 Nocona Cemetery, in the Jacob Lenow Survey, 1 mile west of Nocona and on the east side of the Rogers & Rogers pool, was flowing by heads through casing, awaiting a potential gage. Casing had been perforated from 4,325 to 4,360 ft. and best saturation is reported to be in the lower part of the section, this being several feet below the regular producing horizon in the other wells in the field. In the northeast corner of the L. S. Howard Survey and ¾ mile southeast of the Benton-Holmes pool, United Producers and Continental Oil Co.'s No. 1 West drilled sand showing oil from 3,920 to 3,930 ft., where the test is shut down for electrical survey. This indicates a possible third producing level in the pool, the original horizon having been at 2,900 ft. and the second and granite wash pay at 3,800 ft.

A deep wildcat was reported for Baylor County by the British American Oil Producing Co., one of the main exploratory operators in the county. It is No. 1 C. E. Holeman, center of west 235 acres out of Section 194, T.&N.O. Survey. Location is 2½ miles southwest of Maybelle. Contract depth is 4,000 ft.



Zingery Oil Map Co., Fort Worth

The greatest deep lower Marine Trinity exploratory campaign in several years is under way in eastern Texas with 11 of the district's 20 active wildcats being projected to that horizon

NORTH TEXAS COMPLETIONS

Archer County

Bert L. Ligon's No. 1 O. T. Anderson, 4,398-4,414 ft., 524 bbl. Bert L. Ligon's No. 2 O. T. Anderson, 4,372-4,402 ft., 680 bbl. Southern Petroleum Corp., Inc.'s No. 10 T. C. Moss B, 1,310 ft., dry. C. H. Staley and others' No. 16 Anna Mangold, 3,750-3,850 ft., 672 bbl. Paul Atchley's No. 1 E. A. Hausler, 1,136 ft., dry. E. G. Boardman's No. 1 Frank Pastusek, 1,520 ft., dry. Henry Craig's No. 1 M. P. Andrews A, 945 ft., dry. Kimmell & Woofter's No. 11 Mrs. Goldie Williams, 557-81 ft., 10 bbl.

Clay County

J. A. Morgan's No. 1 C. T. Taylor, 341 ft., dry. Shell Oil Co., Inc.'s No. 1 L. C. Scaling, 5,436 ft., dry. Staley Oil Co.'s No. 1 D. J. Percifield, temporarily abandoned, location.

Cooke County

Cox & Hamon's No. 3 K. Neu A, 4,926-70 ft., 800 bbl. Cox & Hamon's No. 6 K. Neu B, 4,670-5,051 ft., 816 bbl. Bridwell Oil Co.'s No. 8 J. R. Parkey, 700-44 ft., 12 bbl. Bridwell Oil Co.'s No. 9 J. R. Parkey, 687-706 ft., 22 bbl. Pace Petroleum Corp. No. 17 R. E. Aldridge, 1,166-1,208 ft., 10 bbl. A. D. Robinson's No. 16 J. H. Otto B, 1,310-35 ft., 9 bbl. M. Staniforth's No. 4 B. Voth, 1,669-77 ft., 330 bbl.

Hardeman County

Amerada Petroleum Corp.'s No. 1 W. M. Rice, 8,258 ft., dry.

Jack County

B. C. Gilmore's No. 1 Mrs. M. A. Walker, 588 ft., dry. B. C. Gilmore's No. 1 Oscar Wilkes, 608 ft., dry. O. J. Perrin's No. 5 J. S. Rodes, 3,077-3,153 ft., 400 bbl. Rowan & Nichols Oil Co. and E. L. Wilson's No. 3 John Matlock, 3,085-3,126 ft., 375 bbl. Showers & Moncrief's No. 2 J. R. Lawrence, 3,180-3,226 ft., 415 bbl. Showers & Moncrief's No. 2 J. F. Rogers, 3,236-90 ft., 286 bbl. E. D. Willis and others' No. 1 J. T. Roney, 413 ft., dry.

Montague County

. H. C. and C. C. Holcombe's No. 1 E. G. Reed, 2,811-24 ft., estimated 2 bbl.

Wichita County

L. T. Burns' No. 1 K. T. Goetze, 1,599-1,612 ft., 118 bbl. W. H. Hammon's No. 14 S. H. McCarty J, 3,798-4,012 ft., 862 bbl. Hanlon-Buchanan, Inc.'s No. 2 Fassett & Tuttle E, 3,990-4,052 ft., 960 bbl. Bridwell Oil Co.'s No. 25 H. Willis, 259-70 ft., key well. J. R. Price and others' No. 1 Sam H. Davis, 1,670-1,710 ft., 1 bbl. Bridwell Oil Co.'s No. 4 Mrs. Anna Mangold, 3,762-3,828 ft., 864 bbl. Consolidated Oil Co.'s No. 3 E. M. Barnes A, 3,985-4,008 ft., 600 bbl. E. C. Oil Co.'s No. 13 Anna Mangold, 3,772-3,860 ft., 568 bbl. Grace & Wood and others' No. 5 C. Birk, 3,920-4,063 ft., 81 bbl., pumping. Heyser, Heard & Clardy's No. 3 Fassett & Tuttle, 3,956-4,038 ft., 1,440 bbl. Kadane, Inc.'s No. 1 R. J. Bradley, 4,047 ft., dry. J. E. Kellar's No. 5 Waggoner Brothers, 511 ft., dry. Alex McCutchin's No. 8 L. C. Denny, abandoned location. Melat & Graham's

(Continued on Page 77)

California Field Report

New Pool or Extension to Greeley Field in Prospect

By
L. P. STOCKMAN

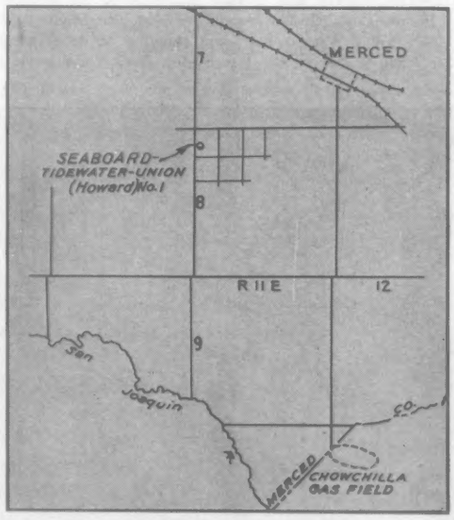
LOS ANGELES, Calif., Oct. 30.—The most important development in California from a drilling standpoint this week was the coring of oil sand in No. 1 Sullivan of General Petroleum Corp. in Section 12-29-25, about midway between the Greeley and Rio Bravo fields in Kern County. It is too early to say that the Rio Bravo oil sand found in this wildcat will prove commercially productive, but the outlook is exceptionally good. Top of the pay was logged at 11,340 ft. and it was still present when drilling operations were concluded at 11,380 ft. preparatory to landing a string of pipe above the sand. As the limits of production have been established in the southeastern end of the Rio Bravo field, No. 1 Sullivan can only be an outpost in the extreme northwestern end of the Greeley field or the discovery well in a new pool. Present indications point to the possibility that General Petroleum Corp. has found a possibly productive area northwest of the Greeley field and southeast of the Rio Bravo field. Top of the Rio Bravo zone was cored at 11,330 ft. and almost at the exact depth the geological department of General Petroleum Corp. had predicted.

Superior Oil Co. defined the southeastern limits of the Rio Bravo field some time ago when No. 1 Helbling in Section 1-29-25 failed to develop commercial production in either the Rio Bravo zone or in rocks of Eocene age. This well was listed for abandonment this week with bottom of the hole at 14,018 ft., and containing 2,456 ft. of 13⅜-in. surface casing, 12,200 ft. of 7⅝-in. pipe, and a 4¾-in. liner in the bottom of the hole. No. 1 Helbling logged top of the Rio Bravo zone at 11,720 ft. and cored top of the Vedder zone at 11,771 ft. which proved wet and rather spotted. An intense zone of faulting was cored at 9,000-12,300 ft. indicating that the productive limits of the Rio Bravo zone is defined on the southeast by a well-established fault. Oil sand cored at 12,220-64 ft. which may have been a repetition of the Rio Bravo zone proved unproductive. On a formation test of this zone, the recovery consisted of 6,000 ft. of salt water in the drill pipe with no oil nor gas in evidence. Top of the Eocene which consisted of gray, quartzone sand resembling the productive Gatchell zone in the Southeast Coalinga field was logged at 13,600 ft. Top of the Walker zone was found at approximately 13,750 ft. and the hole was bottomed in the basement which consisted of altered diabase at 14,018 ft. No. 1 Helbling therefore drilled through the entire section at this point.

Montebello

Five new wells were completed in the west end of the Montebello field of Los Angeles Basin, but despite this relatively large list, peak development and peak production down to the bottom of the La Merced zone has definitely been passed. For several weeks operators in increasing number have been opening up the high-pressure gas zone to the producing column. This does not mean that crude-oil production in the Montebello field will take a nose dive in the immediate future as this gas zone is capable of sustaining production for some time to come especially as long as the court injunction remains in effect and prevents overproduction of gas and resulting waste. The court recently held a series of hearings to determine the advisability of making the restraining order a permanent injunction, but finally postponed action until early in November. Meantime, the voters of the state will have determined the future status of the Atkinson Oil Control Act as this measure will be either approved or voided by the vote at a special election to be held November 7. It is generally believed that if the Atkinson oil control bill becomes a law, supervision of production activities in the west end of the Montebello field will be immediately taken over by the commission appointed under the provisions of the act. This means that if the bill is approved operators in the Montebello field will continue to produce under the present injunction, or under a superseding one that may regulate both production of crude oil and gas.

The present court injunction prohibits waste of natural gas by specifying that the quantity of gas allowed to be produced must not exceed the combined outlets for moving this gas from the field. The allowable volume permitted has been increased from time to time as new wells came in so that no operator could charge that he was being unduly penalized. In order to do this, pipe-line companies and natural-gasoline plants have increased takings of gas by enlarging facilities and making additional connections to existing facilities. Early in the life of the extension, which is in the extreme west end of the Montebello field, it was determined that it would be impossible to regulate production of wells by mutual consent or by complying with the allowables set up by Umpire Pemberton under jurisdiction of the Central Committee of California Oil Producers, because a few operators refused to conform with any plan or program to regulate production of



Seaboard Oil Corp., Tide Water Associated Oil Co. and Union Oil Co. are drilling a wildcat on the Howard lease in Section 6-8-11 southwest of Merced and northwest of the Chowchilla gas field in Merced County, California

any well or group of wells. This failure to agree on a uniform plan of action resulted in action being taken by the director of natural resources when gas waste became excessive with the result that the court signed a temporary restraining order.

New Completions

Union Oil Co. headed the completion list this week by finishing four new wells in the west end of the Montebello field and appears to be decreasing the amount of drilling. Completion of this quartet of new wells leaves the company with two strings of tools in operation, one location for a new well and a proposal to deepen No. 1 Wilcox from the sixth zone to the La Merced zone. There is a tendency on the part of other operators in the field to reduce the scope of drilling, although several companies have commitments to drill additional wells in the area south of Beverly Boulevard where 23 wells have either been completed or are in course of work. Texas Co., which is drilling the most westerly well in the field on the Wilcox lease, cored top of the La Merced zone last week and with bottom of the hole at 7,586 ft. has landed a string of casing preparatory to making a production test. This well is only a short distance north of Beverly Boulevard in the extreme west end of the field and if it shows good production will lead to additional drilling.

The new wells of Union Oil Co. completed this week were No. 7 Paul Howard and Nos. 7 and 5 on the Wilcox lease and No. 10 Howard & Smith. The high gas-oil ratio of some of these wells indicates that the company is producing the high-pressure gas in the top of the La Merced zone, but which is separated from the main productive member by a shale body. No. 10 Howard & Smith was brought in flowing 440 bbl. of 37.6-gravity oil and 1,150,000 cu. ft. of gas per day from the La Merced zone with bottom of the hole at 7,615 ft. No. 7 Paul Howard of Union Oil Co. was brought in flowing 617 bbl. of 37.3-gravity oil and 1,190,000 cu. ft. of gas per day through a 32/64-in. and a 64/64-in. bean from the La Merced zone at 7,630 ft.

Additional Wells

Nos. 5 and 7 on the Wilcox lease of Union Oil Co. were completed flowing 165 bbl. of oil and 464,000 cu. ft. of gas and 360 bbl. of crude and 5,360,000 cu. ft. of gas per day, respectively, from the La Merced zone. No. 5 Wilcox was brought in flowing through a 32/64-in. and a 64/64-in. bean from 7,630 ft. Absence of a packer on the 7,355 ft. of 2½-in. tubing indicates the gas zone is being produced along with crude oil from the main body of the oil zone. No. 7 Wilcox was completed at 7,640 ft. Production is flowing through 7,588 ft. of 2½-in. tubing behind a tubing pressure of 300 lb. and a casing pressure of 750 lb.

Albertson-Boswell Oil Co. completed No. 1 Schnakenburg flowing 606 bbl. of 35.1-gravity oil and 1,200,000 cu. ft. of gas daily from the La Merced zone with bottom of the hole at 7,686 ft. Production was flowing through a 1-in. bean behind a tubing pressure of 350 lb. and a casing pressure of 2,020 lb. Top of the productive zone was logged at 7,420 ft. and the hole was finished with a 7-in. water string cemented at 7,585 ft. and subsequently gun perforated at 7,506-90 ft. and 118 ft. of 5¾-in. liner landed at 7,686 ft. and carrying perforations at 7,590-7,686 ft. The 7,664 ft. of 2½-in. tubing had a packer at 7,546 ft. This company has erected a new rig for No. 2 Schnakenburg and the rotary drilling equipment used in No. 1 is being moved over to the second well.

Coalinga

Two excellent flowing wells were completed in the Southeast Coalinga field of Fresno County this week when R. S. Lytle finished No. 28-18-F in Section 18-20-16 flowing 2,040 bbl. of clean 31.7-gravity oil and 1,310,000 cu. ft. of gas per day from 7,838 ft. and Superior Oil Co. brought in No. 5 Coalinga fee in Section 7-20-16 flowing 3,290 bbl. of clean 31.4-gravity oil and 1,760,000 cu. ft. of gas daily from 8,192 ft. Top of the Kreyenhagen was logged at 6,090 ft., top of the Glauconitic at 7,241 ft., top of the Gatchell oil zone was cored at 7,310 ft., and base of the productive zone was logged at 7,828 ft. No. 5 Coalinga fee of Superior Oil Co. in the northeast end of the Southeast Coalinga field was finished with an 8⅝-in. water string cemented at 8,056 ft. and a 6⅝-in. liner. Top of the Kreyenhagen was cored at 6,882 ft., top of the Glauconitic was found at 8,012 ft., and top of the Gatchell zone was logged at 8,066 ft. In the intervening area between the Northeast and Southeast Coalinga fields, Wilshire Oil Co. has recovered the fish that has been retarding progress for the past several weeks and the crew is preparing to go ahead. This wildcat cored 50

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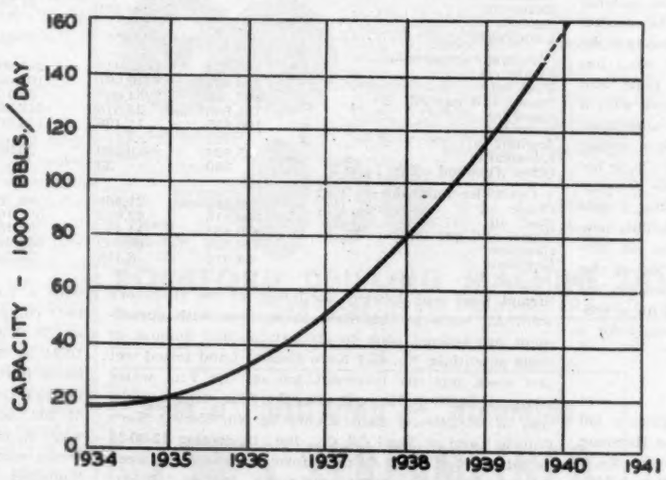

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ft. of oil sand recently but the formation test proved inconclusive when the packer pulled loose. It is the intention of the company to land a string of casing as soon as the hole has been cleaned out and reamed down. Drilling operations in the Northeast Coalinga field are going ahead slowly and no great change is expected in either this district or in the Southeast Coalinga field to the south.

Kettleman North Dome

Kenda and Standard Oil Co. each completed a new well in the Kettleman North Dome field in the San Joaquin Basin and both proved to be large flowing wells. The former's No. 25-26-Q, in Section 26-22-18, was finished flowing 2,814 bbl. of relatively clean 34.3-gravity oil and 2,143,000 cu. ft. of gas daily from the Temblor with bottom of the hole at 7,920 ft. This new well which was brought in flowing through a 128/64-in. bean logged top of the Brown shale at 5,325 ft. and logged top of the Temblor at 6,707 ft. No. 63-17-Q of Standard Oil Co. in Section 17-22-18 was brought in flowing 2,989 bbl. of 33.7-gravity oil and 1,550,000 cu. ft. of gas per day from 8,490 ft. Production was coming through a 1-in. bean behind a tubing pressure of 350 lb. and a casing pressure of 800 lb.

Operators throughout the state are wondering what will be done with Kettleman North Dome field and Wilmington if the Adkinson Oil Control Act is voted in and becomes operative. Operators in other fields feel that these two areas are the direct cause of this control measure being brought up for a vote at the present time and are firmly convinced that Kettleman Hills will be subjected to a drastic drop in production and the clamps put on more closely at Wilmington. When attempts have been made in the past to cut production of the Kettleman North Dome field, operators in that field maintained that this would be in direct conflict with the desire of the Navy and interior departments. Now that both departments of the national Government have endorsed the Atkinson oil control bill it will be interesting to note what action will be taken with respect to Kettleman Hills. Just what has created the criticism against Kettleman Hills and Wilmington is conjectural as both fields have with a few exceptions kept within the prescribed allowables set up and have retarded drilling operations rather drastically. At Kettleman Hills, Standard Oil Co. is apparently not satisfied with results of Eocene development to date because the company is starting a new Eocene test to be drilled in Section 29-21-17. This new deep-zone exploratory well will be known as No. 321-29-J and it is located in the Huffman section of the field. No. 2-19-J in Section 19-21-17 which Standard has carried down to 10,950 ft. is being prepared for a production test of the Eocene and should be ready for a test within the next few days.

Ventura Avenue

In the Ventura Avenue field California Alliance Oil Co. proved up some additional acreage on the Hartman lease of Bolsa Chica Oil Co. when it completed No. 1 Hartman flowing 435 bbl. of 32.7-gravity oil and 600,000 cu. ft. of gas per day from 7,480 ft. This new well, which was finished with an 8⅝-in. water string landed and cemented at 7,337 ft., was not finished in the deep 57 zone and thus did not extend the lower zone. Its completion, however, did prove up several additional locations for Bolsa Chica in the upper zone on the Hartman property. Lloyd Corp., headed by Ralph Lloyd, largest landowner in the Ventura Avenue field, has picked up the deep 57 zone in his No. 3 Lloyd and is drilling ahead in the pay at 9,500 ft. Tide Water Associated Oil Co. recompleted No. 66 Lloyd in the Ventura Avenue field after deepening from 5,110 ft. to 6,434 ft., and returned it to production flowing 145 bbl. of 26.6-gravity oil cutting 4 per cent through a 1-in. bean along with 1,040,000 cu. ft. of gas. This well was finished with a 7-in. water string cemented at 5,845 ft. and 638 ft. of 5-in. liner landed at 6,422 ft. and perforated at 5,847-6,422 ft.

San Joaquin Basin

Tide Water Associated Oil Co. completed another excellent flowing well in the Strand field of Kern County which was pioneered by Continental Oil Co. and developed by Tide Water Associated Oil. No. 46-7 Kern County Land in Section 7-20-26 was brought in flowing 2,014 bbl. of 34.8-gravity oil and 2,400,000 cu. ft. of gas daily from the Stevens zone with bottom of the hole at 8,372 ft. This is the third completion of Tide Water Associated Oil Co. and is one location southeast of the discovery well. The second completion in the Strand field was located northwest of the discovery well. All wells in this field in keeping with curtailment are beaned back to an infinitesimal amount of their potentials. No. 46-7 Kern County Land tested wet last week but the recement job on the 7-in. water string at 8,295 ft. proved effective. The next completion in the Strand field should be No. 75-12-B Kern County Land of Shell Oil Co., Inc., in Section 12-30-25 as this well at 8,271 ft. on a formation test this week flowed clean oil without any water. Top of the Stevens zone was logged by Shell at 8,268 ft. and the formation test was at 8,208-71 ft.

Union Oil Co. in the eastern end of the Cole's Levee field of Kern County, completed No. 58-11 Kern County Land in Section 11-31-25, flowing 2,650 bbl. of clean 36.5-gravity oil and 2,500,000 cu. ft. of gas daily from the Stevens zone with bottom of the hole at 10,166 ft.

In the North Belridge field Belridge Oil Co. recompleted No. 39 in Section 26-27-20 flowing 910 bbl. of 32.1-gravity oil and 10,000,000 cu. ft. of gas per day from the Wagonwheel zone after the hole had been deepened to 8,243 ft. from the Temblor.

Deep drilling to below 13,000 ft. apparently does not deter operators in the Wasco field of Kern County because Standard Oil Co. is about ready to spud in No. 1 Mushrush in Section 7-27-24, and Continental Oil Co. has completed the rig for No. 5-8-A Kern County Land in Section 8-27-24. George F. Getty, Inc., which recently extended the productive limits of the field to the northwest still has another month before being obliged to undertake additional development. It costs about $200,000 to drill these wells, and upon completion they are only allowed to produce 210 bbl. per well per day, and thus it will take a long time for them to pay off.

Coastal District

E. H. Lomas completed No. 1 Reg in the Santa Maria Valley field in Section 29-10-34, flowing 2,490 bbl. of 15.6-gravity oil from 5,601 ft. after finishing the hole with a 7-in. water string cemented at 5,246 ft. The next completion in the Santa Maria Valley field should be No. 2-3 O'Donnell of Union Oil Co. in Section 21-10-34 as it is drilling in the pay at 5,145 ft. In the Santa Barbara Mesa field outside Santa Barbara, Trans-Oceanic Oil Co. has completed No. 4 Mdivani pumping 51 bbl. of 15.6-gravity oil cutting 12 per cent from 1,584 ft. after finishing the hole with an 8⅝-in. water string cemented at 1,530 ft. and 75 ft. of 5-in. liner including 50 ft. of perforated landed on bottom. Sunset Oil Co. has suspended drilling in Section 32-4-25 in the Carpinteria district of Santa Barbara County at 3,413 ft. due to the unfavorable outlook. The bit encountered a thrust fault at 3,040-70 ft. and passed from Temblor shale into Pleistocene.

Los Angeles Basin

For the first time in several months the Wilmington field of Los Angeles County failed to show up in the completion column with one or more new wells. No decision has been reached regarding future development of the Ford zone and from present indications this horizon will be held back for an indefinite period. After being held up by mechanical trouble for several weeks, Southwest Exploration Co., which is developing extensive tideland leases in the Huntington Beach field of Orange County, completed No. 22 State this week pumping 576 bbl. of clean 26.7-gravity oil and 190,000 cu. ft. of net formation gas from a depth of 5,203 ft. This well which was deviated out beneath the Pacific Ocean was finished with an 8⅝-in. water string cemented at 4,705 ft. and 625 ft. of 6⅝-in. liner including perforations at 4,703-5,203 ft.

In the Potrero field of Los Angeles County Basin Oil Co. has completed No. 1 Trans-Western pumping 192 bbl. of 44.3-gravity oil cutting 5 per cent from 6,377 ft. This is an old well originally drilled by York & Smullin and after being kicked around between several operators became the property of the Basin Oil Co. which whipstocked and deepened the hole southeast

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	October 21		October 14			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	86,160	12,309	.....	.....	857,366	852,826
Fuel oil	137,768	19,681	.....	.....	1,956,841	.....
Diesel and gas oil	.....	.....	.....	.....	163,501	.....
Gasoline	176,314	25,188	.....	.....	2,894,718	2,631,841
Kerosene	.....	.....	.....	.....	194,850	257,005
Foreign exports—						
Crude oil	384,673	54,953	154,328	22,047	12,226,170	17,667,687
Fuel oil	51,329	7,333	108,697	15,528	7,320,698	7,427,052
Diesel and gas oil	331,034	47,291	68,101	9,729	7,290,616	4,940,657
Gasoline	198,646	28,378	86,214	12,316	6,301,411	6,457,739
Kerosene	77,983	11,141	17,388	2,484	1,391,072	862,828
Lubricants	18,311	2,616	.....	.....	145,678	173,388
Coastwise-domestic—						
Crude oil	150,212	21,459	98,780	12,683	10,163,921	9,785,619
Fuel oil	214,606	30,658	410,890	58,699	8,562,100	9,663,018
Diesel and gas oil	60,387	8,627	55,192	7,885	1,888,443	1,282,948
Gasoline	289,709	41,387	366,080	52,297	13,672,691	12,118,732
Kerosene	18,697	2,671	42,091	6,013	445,556	208,566

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	124,055	.....
Diesel and gas oil	84,194	12,028	.....	.....	153,744	196,644
Gasoline	.....	.....	43,235	6,176	43,235	25,409
Kerosene	.....	.....	31,553	4,508	100,507	16,124
Asphalt	.....	.....	.....	.....	425,845	490,039
Lubricants	.....	.....	.....	.....	24,870	19,945
Foreign exports—						
Crude oil	.....	.....	87,669	12,524	4,405,259	4,588,646
Fuel oil	235,536	33,648	.....	.....	2,544,292	2,261,553
Diesel and gas oil	51,213	7,316	.....	.....	2,185,929	2,423,641
Gasoline	.....	.....	231,845	33,121	2,749,592	4,726,537
Kerosene	22,872	3,267	127,475	18,211	554,589	696,099
Asphalt	.....	.....	.....	.....	14,151	56,258
Lubricants	7,513	1,073	20,888	2,984	474,390	485,567
Other finished oil	230	33	.....	.....	699	.....
Coastwise-domestic—						
Fuel oil	86,210	12,316	180,212	25,745	5,392,850	5,005,548
Diesel and gas oil	40,445	5,778	36,947	5,278	1,081,895	1,265,755
Gasoline	136,887	19,555	170,369	24,338	6,652,125	6,455,032
Kerosene	40,214	5,745	30,151	4,307	771,881	481,002

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	86,160	12,309	.....	.....	857,366	852,826
Fuel oil	137,768	19,681	.....	.....	2,080,896	.....
Diesel and gas oil	84,194	12,028	.....	.....	317,245	196,644
Gasoline	176,314	25,188	43,235	6,176	2,937,953	2,657,250
Kerosene	.....	.....	31,553	4,508	295,357	273,129
Asphalt	.....	.....	.....	.....	425,845	490,039
Lubricants	.....	.....	.....	.....	24,870	19,945
Foreign exports—						
Crude oil	384,673	54,953	241,997	34,571	16,631,429	22,256,333
Fuel oil	286,865	40,981	108,697	15,528	9,864,990	9,688,605
Diesel and gas oil	382,247	54,607	68,101	9,729	9,476,545	7,364,298
Gasoline	198,646	28,378	318,059	45,437	9,051,003	11,184,276
Kerosene	100,855	14,408	144,863	20,695	1,945,661	1,558,927
Asphalt	.....	.....	.....	.....	14,151	56,258
Lubricants	25,824	3,689	20,888	2,984	620,068	658,955
Other finished oil	230	33	.....	.....	699	.....
Coastwise-domestic—						
Crude oil	150,212	21,459	98,780	12,683	10,163,921	9,785,619
Fuel oil	300,816	42,974	591,102	84,443	13,954,950	14,668,566
Diesel and gas oil	100,832	14,405	92,139	13,163	2,970,338	2,548,703
Gasoline	426,596	60,942	536,449	76,636	20,324,816	18,573,764
Kerosene	58,911	8,416	72,242	10,320	1,217,437	689,568

of its original location and returned it to production as a commercial producer. Basin Oil Co. has experienced considerable success in the Potrero field by careful work and selective perforating in an area that heretofore proved disastrous for a number of operators.

La.-Ark. Fields

(Continued from Page 65)

lb., total depth 7,645 ft. Marine Oil Co.'s No. 5 M. D. Justiss, Sec. 18-18-17, Morgan sand 5,800-14 ft., tested salt water, abandoned total depth 5,814 ft.

Wildcat—Union County

Jo-Mo Oil Corp.'s No. 1 Union Sawmill Co., C SE NE NE Section 24-17-14, dry and abandoned, total depth 3,270 ft.

North Texas Fields

(Continued from Page 73)

No. 6 Munger A, 3,740-3,887 ft., 680 bbl. Palmer & Chenault's No. 13 S. H. McCarty, 3,862-4,016 ft., 250 bbl., 10 hours. Perkins & Cullum's No. 27 S. B. Burnett and others A, 665-71 ft., 3 bbl. George Proctor's No. 1 Ed Foster C, 1,040 ft., dry. Royal Petroleum Corp.'s No. 3 R. B. James and others, 3,932-4,001 ft., 765 bbl.

Wilbarger County

Consolidated Oil Co.'s No. 1 G. B. Ancell, Jr. N, 3,750-72 ft., 510 bbl. Consolidated Oil Co.'s No. 2 W. T. Waggoner estate CC, 3,749-75 ft., 872 bbl.

Young County

Rhea Anderson's No. 1 A. A. Bernhardt, 1,028 ft., dry. Bernsen & O'Rourke's No. 3 Mary E. Harlan and others, 2,707-70 ft., 524 bbl. Gentex Oil Co.'s No. 1 Nann Burch, 4,364 ft., dry. McDaniel & Page's No. 3 O. S. Perkins, 750 ft., dry. Lupton & McLester's No. 4 J. A. Brown, 3,762-3,811 ft., 405 bbl. R. J. Watson's No. 3 B. A. Larimore, 562-79 ft., 10 bbl.

EASTERN TEXAS

DALLAS, Tex., Oct. 30.—The most widespread deep Trinity exploratory campaign in several years is under way in eastern Texas. With the recent announcement of several deep Paluxy and Glenrose tests and the staking of a 9,500-ft. test by Shell Oil Co., Inc., in the Chapel Hill area of Smith County, there are now 11 deep tests in the area either drilling, testing or rigging up. The activity is defined to no one area, being scattered from Limestone and Houston counties on the south to Hunt and Camp counties on the north.

Smith County has three deep tests, Houston and Limestone counties two each, and Camp, Hunt, Anderson, and Rusk all have one each. Perhaps the most closely watched are the two in Houston County's Grapeland area. Shell Oil Co., Inc., is backing two 10,000-ft. tests, one being drilled as the J. C. Cook's No. 1 B. T. Masters, ½ mile northwest of Grapeland, which is drilling at 5,770 ft. after topping the Pecan Gap at 4,685 ft. and drilling it to 4,920 ft. Austin chalk was topped at 5,628 ft. and the test is drilling in this formation. The other 10,000-ft. test in this area is being drilled as Wynne Drilling Co. and Shell Oil Co., Inc.'s No. 1 G. E. Corsey, M. Sallas Survey, 2½ miles south of Percilla and southeast of the Grapeland area. It is drilling at 6,300 ft. after topping the Woodbine sand at 5,921 ft. and recovering only seven joints of salt water on a 12-minute drill-stem test from 5,922 to 5,931 ft.

In Smith County Shell Oil Co., Inc., has announced location for No. 1 H. Campbell, projected 9,500-ft. test 600 ft. from the north and 500 ft. from the west lines of the Phillip Lively Survey. The projected depth is expected to test the Travis Peak formation just below the Glenrose formation which is yielding distillate in an area opened about 2½ miles southwest by Hunt Oil Co.'s No. 1 Bradley, Thomas Payne Survey, in June 1938. The two other deep tests in the county are Texas Co.'s No. 1 Scritchfield and Dr. Grant's No. 1 J. W. Waters. Texas Co.'s test was last reported fishing for bit cone at a total depth of 7,834 ft. It was reported last week that the company was preparing to set a protective string of casing and drill deeper, but the fishing job has delayed this procedure. The top of the Fredericksburg group was reported at 7,265 ft., top of the Goodland at 7,405 ft. and top of the Paluxy at 7,505 ft. Final operation in the county is Grant's No. 1 Waters, which is drilling below 5,750 ft. and projected to the lower Trinity sections.

In Limestone County Samuel's No. 1 Barrow, W. G. McKinsey Survey, 4 miles northwest of Thornton, is temporarily shut down at a total depth of 6,029 ft., with the top of the Paluxy reported at 4,033 ft.; top of the Glenrose at 4,145 ft.; top of the Pettit at 5,591 ft., and top of the Travis Peak at 5,716 ft. A slight show of gas was found in the Glenrose from 5,007 to 5,029 ft., but a 28-minute drill-stem test netted only water. On the west flank of the Mexia field in Limestone County George Peyton's No. 1 Harris, Pedro Varella Survey, is drilling below 3,490 ft. It is projected to the lower Trinity sections.

On the extreme north edge of the East Central Texas area, and in Hunt County, Westmount Oil Co. is drilling at 515 ft. in No. 1 Clark, W. H. Williams Survey, 1 mile northwest of Celeste. The well is slightly west of a hole abandoned by the company several weeks ago when a fishing job developed at 4,800 ft. It had drilled to a total depth of 4,916 ft.

The proposed Rusk County deep test is a location which has been staked for several months, but the operator, A. C. Whittington, announced last week that plans were near completion for spudding at an early date. It is No. 1 Kangerga, Ignacio Castro Survey, 9½ miles north and slightly east of the town of Pirtle.

Camp County's deep test is the H. S. Moss (formerly W. C. McGlothlin) No. 1 Venters, temporarily abandoned in June 1938 at a total depth of 5,710 ft. It is in the S. Wright Survey, 3 miles southeast of Leesburgh.

General field activity in the district showed a slight decline with only three completions listed for the East

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Texas field and three for the East Central Texas area. There were only two new locations staked in the East Texas field and only three in the central area, one of these three being the aforementioned deep test in Smith County and another a test in the recently opened Bazette area of Navarro County and just across the river from the Flag Lake field of Henderson County. All three of the East Central Texas completions were wildcat abandonments.

EAST TEXAS FIELD COMPLETIONS

(One-hour gages)

Gregg County

O. R. Cooper's No. 8 A. Compton, 3,519-35 ft., 46 bbl. Overton Refining Co.'s No. 2-B I.&G.N. RR., abandoned location. Overton Refining Co.'s No. 4-B I.&G.N. R.R.,' abandoned location. Sinclair Prairie Oil Co.'s No. 63-A A. A. King, 3,470-3,591 ft., 70 bbl. Sinclair Prairie Oil Co.'s No. 45-B A. A. King, 3,432-46 ft., 90 bbl.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Freestone County

A wildcat, Brothers Oil Co.'s No. 1 P. D. C. Ball, M. Rionda Survey, 5 miles northwest of Butler, topped Woodbine sand at 5,486 ft. and was dry and abandoned at a total depth of 5,524 ft.

Limestone County

A wildcat, Richards-Spriegel's No. 1 E. McDaniel, A. Bass Survey, 1 mile north of Prairie Hill, dry and abandoned at total depth of 1,739 ft.

Van Zandt County

O. W. Killiam's No. 1 Republic Insurance Co., J. Salinga Survey, 2 miles northeast of Myrtle Spring, topped sand at 4,262 ft. and was dry and abandoned at total depth of 4,626 ft.

Southwest Texas Fields

(Continued from Page 72)

Refining Co.'s No. 27 McGill, 4,733 ft., 139 bbl., 9/64-in. choke. Colorado field: Henshaw Brothers' No. 2-B Trevino, perforated casing 3,004-15 ft., 75 bbl., ⅛-in. choke.

Jim Wells County

Bandera field: Parr & Delaney Oil Co.'s No. 1 Garcia, 5,651 ft., dry and abandoned. Reynolds field: Tom Graham's No. 6-A Mosser, perforated casing 5,140-47 ft., gas well. Kilgore Development Co.'s No. 3-A Mosser, perforated casing 4,815-25 ft., 130 bbl., 9/64-in. choke. Texas Gulf Producing Co.'s No. 1-B Pustejuvsky, 5,170 ft., 121 bbl., ⅛-in. choke. East Alice field: E. O. Ramsey's No. 1 Bankers Mortgage Co., 5,325 ft., dry and abandoned.

Nueces County

Minnie Bock field: C. Andrade's No. 2 Minnie Bock, perforated casing 3,820-22 ft., 104 bbl., 9/64-in. choke. Earl Fain's No. 2-A Bock, perforated casing 3,818-21 ft., 114 bbl., 9/64-in. choke. South Clara Driscoll field: Wellington Oil Co.'s No. 1 Dugger, perforated casing 5,337-60 ft., 126 bbl., ⅛-in. choke. Saxet field: Western Gulf Petroleum Co.'s No. 1 Bliss, perforated casing 5,749-60 ft., 90 bbl., ⅛-in. choke. Western Gulf Production Co.'s No. 9 Isensee, 5,850 ft., 85 bbl., ⅛-in. choke.

McMullen County

Campana field: Loma Oil Co.'s No. 2 Edrington, 2,660 ft., dry and abandoned.

Live Oak County

White Creek field: Brauer, Holland & Smith's No. 5 Gayle, perforated casing 1,428-40 ft., 130 bbl., ¼-in. choke.

Refugio County

Tomoconnor field: Quintana Petroleum Corp.'s No. 4-B Williams, perforated casing 5,824-32 ft., 672 bbl., ¼-in. choke.

San Patricio County

Humble Oil & Refining Co.'s No. 6 Countiss, 5,660 ft., 148 bbl., ⅛-in. choke. Plymouth Oil Co. and others' No. 2 Hutton-Newman, perforated casing 5,640-72 ft., 157 bbl., 7/64-in. choke. Plymouth field: Easter-Wood Production Co.'s No. 2 Cryder, perforated casing 5,643-48 ft., 44 bbl., 6 hours, 9/64-in. choke.

Starr County

South Ricaby field: W. W. Zimmerman's No. 6 Wood, perforated casing 1,707-18 ft., 75 bbl., pumping.

Webb County

Carolina-Tex field: Carolina-Texas Oil Co.'s No. 12 Houston Oil Co., perforated casing 4,960-77 ft., gas well.

Zapata County

Mirando Valley field: Buffalo Oil Co.'s No. 2-B Hinnant, 1,810 ft., 60 bbl., ¼-in. choke. Interstate Minerals, Inc.'s No. 3-B Lopez, 852 ft., dry and abandoned. Interstate Minerals, Inc.'s No. 2-C Lopez, 1,813 ft., 98 bbl., ⅝-in. choke.

Producers of Pennsylvania Warned on Inflation

NEW YORK.—Noel Robinson, vice president of Tide Water Associated Oil Co., warned Pennsylvania oil companies against price inflations due to the European war.

He issued a statement saying: "If continued, the current price movement in Pennsylvania lubricating oils constitutes, in our opinion, a dangerous threat to the entire trade, including producers, refiners, jobbers, and retailers.

"During the last 90 days market-price quotations for Pennsylvania bright stocks and neutrals have increased 66 per cent, or approximately 10 cents a gallon.

"The tragic end of this movement is easy to foresee: Present Pennsylvania customers will have been won to and become permanently wedded to other lubricating oils offered in substitute at more normal prices. Outlets for Pennsylvania products will have shrunk to a fraction of the present size."

Canadian Board Approves Gasoline Rail Rate

OTTAWA, Ont.—Following a session at Calgary the federal Board of Transport Commissioners has approved the establishment of agreed charges by the Canadian National and Canadian Pacific Railways for the movement of gasoline and other petroleum products from Calgary to other points in Alberta and Saskatchewan. The agreement between the railways and Imperial Oil, Ltd., and McColl-Frontenac Oil Co. provides for special rates in consideration of shipping petroleum products by rail, except in local areas. Benefits of the agreement will extend to North Star Oil, Ltd., and the Alberta Hi-Way Refiners, Ltd.

Socony-Vacuum 20-Year Club

The Twenty-Year Club of Socony-Vacuum Oil Co., Inc., held its nineteenth annual banquet recently in the Hotel Astor, New York. The 433 men attending represented a total of 12,299 years of service—or a little more than an average of 28 years each.

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THE OIL AND GAS JOURNAL
TULSA, OKLAHOMA

West, Central and Panhandle Texas

40 New Oil Wells in West Texas; Central Area Active

By D. H. STORMONT

MIDLAND, Tex., Oct. 30.—Development in many of West Texas' closely watched tests reached the critical stage during the week past to total a busy and interesting 7-day period in the district. For the first time in several weeks completions exceeded new locations in the area, there having been 40 new oil wells finaled in addition to five wells drilled deeper and two dry holes. There were only 34 new locations staked during the week, a large portion of them being in the Wasson-Denver pool of Gaines and Yoakum counties.

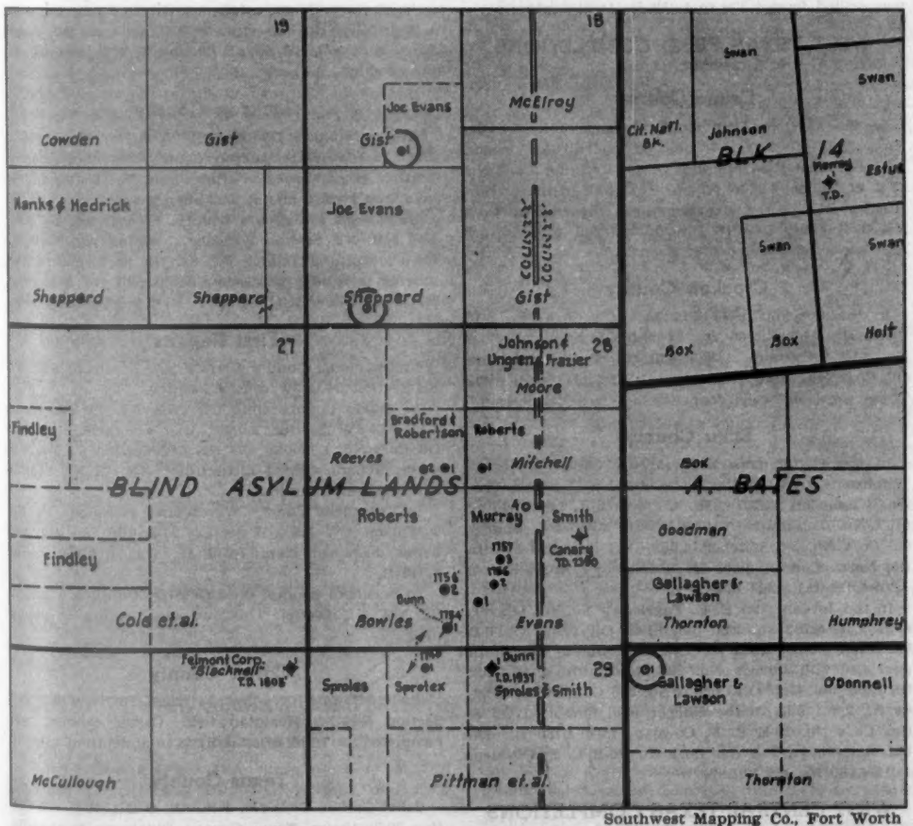
Ector County's wildcat development continued with the possibility seen of a deep test between the Goldsmith, Harper, Foster, and North Cowden pools. Proposed location is by Landreth Production Corp. and the test would be on the J. L. Johnson land, Section 43, T.&P. Survey. It would be approximately 3 miles southeast of the Goldsmith pool, a similar distance northeast of the Harper pool, and about the same distance from the Foster pool. The North Cowden pool is some 5 miles northeast of the tentative location.

Also in Ector County and offering a 3-mile southeast extension to the North Cowden pool's deep producing horizon opened by the Gulf Oil Corp.'s No. 1 Holt last summer, Stanolind Oil & Gas Co.'s No. 1-A Blakeney, Section 28, Block 43, T.&P. Survey, was rigging up pumping equipment for completion after having swabbed 35 bbl. of oil and 7 bbl. of water in 6 hours. Bottomed at 5,160 ft., about 1,000 ft. below the regular producing horizon of the field, the well was acidized with 3,000 gal. from 5,120 ft. to total depth. Best saturation is reported from 5,120 to 5,140 ft. Sinclair Prairie Oil Co.'s No. 3 Fay Holt, east offset to the Gulf discovery well in the deep pay, is drilling below 4,585 ft. and is projected to the deep horizon.

A wildcat in Ector County was reported as having had a showing of oil. The test is I.T.I.O. Co.'s No. 1 Johnson, ½ mile southeast of the Sloan & Zook wildcat producer between the Foster and the North Cowden pools. Located in the northwest corner of Section 39, Block 43, T.&P. Survey, the wildcat offers possibilities of linking the North Cowden field, the Johnson area to the south, and the Foster pool farther to the south. A slight show of oil from 4,056 to 4,057 ft. was reported, but the test continued drilling and was below 4,075 ft. as the week closed.

Continuing the rapid exploratory campaign for deep Ordovician production in the northern part of Pecos County, a new wildcat projected to the Ellenburger was reported last week. Bryce McCandless and the General Crude Oil Co. let contract for No. 1 Virginia W. Crockett, in the south 160 acres of Section 5, Block 110, T.C. R.R. Survey, 2 miles south and slightly west of the recently opened deep Apco pool. Meanwhile several tests are drilling ahead in the Apco pool, none being as yet at a critical depth.

Ward County's indicated pool opener of last week has definitely developed into a gas well. The latest gages showed a daily volume of 40,000,000 cu. ft. The well is Magnolia Petroleum Co.'s No. 2-43 Sealy, Section 43, Block F, G.M.M.B.&A. Survey, 1¾ miles southwest of the Magnolia-Sealy area in extreme north central Ward County. The test had gaged 18,840,000 cu. ft. of gas from 2,900 to 2,910 ft., where cable tools were replaced by rotary for deeper drilling. The test was cored ahead and recovered oil-stained lime from 2,932 to 2,952 ft. It is making no oil at the present depth of 2,952 ft., where the crew is waiting for further orders.



Southwest Mapping Co., Fort Worth

Bowles pool, on the Taylor and Callahan County line, is one of the most closely watched areas in West Central Texas at present. Several new outposts have been recently started

North Basin Area

Continuing to attract considerable attention in the north basin area, Amerada Petroleum Corp.'s No. 1 Auten, ¼-mile north extension to the Seminole pool in central Gaines County, reported a flow of 355 bbl. for completion from the lower of three distinct pay zones. Located in the southeast corner of Section 267, Block G, W.T. Survey, the well is the deepest producer in the pool, the three zones being between 5,200-5,315 ft., 5,320-41 ft., and 5,343-72 ft.

Activity continues at a rapid pace in the large Wasson-Denver pool of Gaines and Yoakum counties, the majority of the field work being in the north part of the link area between the two pools and in Yoakum County. A ¼-mile outpost location in this area was staked during the week when Alco Oil Co. started No. 2 Carter Wilder, 330 ft. from the north and 1,650 ft. from the west lines of Section 804. The Railroad Commission has issued an order effective January 1, 1940, which will provide for uniform allocation and potential methods for the Wasson-Denver. It was decided, after a commission hearing on the subject several weeks ago, that they were on the same structure, and were defined as one and the same pool.

In the extreme north part of the Permian basin and in Crosby County, Gulf Oil Corp. is drilling the deepest of the several active Ordovician projected tests in the West Texas area. It is No. 1-C Swenson, Section 95, Block 2, G.&G.N. Survey, and was drilling "tight" below 7,903 ft. The second deepest test in the basin is Humble Oil & Refining Co.'s No. 1 Westheimer & Daube, Labor 1, League 146, Stonewall County School Lands, in northwestern Cochran County. Located on a 50,000-acre block, it was last reported below 7,385 ft. and believed to be in the basal Permian formations.

WEST TEXAS FIELD COMPLETIONS

Gaines County

In the Wasson area of the Wasson-Denver pool Amon G. Carter's No. 2-E Wasson, 4,913-5,025 ft., 955 bbl. Osage Drilling Co.'s No. 1 Glenn Crain, 5,280-5,320 ft., 85 bbl. Osage Drilling Co.'s No. 1 G. D. Johnson, abandoned at 5,491 ft.

Hockley County

In the Slaughter pool Stanolind Oil & Gas Co.'s No. 2-B Slaughter, 4,900-70 ft., 640 bbl.

Howard County

In the Snyder pool J. F. Postelle's No. 1 D. H. Snyder, 2,680-2,855 ft., 136 bbl.

Kent County

A wildcat, Roy Dawson's No. 1 Haggins, dry and abandoned at 360 ft.

Pecos County

In the Masterson pool Oliver & Cowden's No. 2 Masterson, 1,473-1,507 ft., 10 bbl. In the Lehn area Rockdale Oil Co.'s No. 1 Sullivan, 1,670-1,717 ft., 169 bbl. Sahara Oil Co.'s No. 1 O'Brien-Sullivan, 1,708-40 ft., 133 bbl. In the Taylor-Link pool S. P. Williams' No. 2-A University, abandoned location.

Ward County

In the Payton pool W. A. Black & Sons' No. 1 Texas Cotton Ind., 1,877-1,901 ft., 251 bbl. Texoil's No. 5

Allen, 1,950,2,100 ft., 182 bbl. In the South Ward pool Buffington Oil Co.'s No. 1-A Samuel, 2,202-70 ft., 23 bbl. In the Estes pool Gulf Oil Corp.'s No. 113 O'Brien, 2,735-2,850 ft., 72 bbl. Sinclair Prairie Oil Co.'s No. 18 Archenhold, 2,410-2,697 ft., 323 bbl. Sinclair Prairie Oil Co.'s No. 19 Archenhold, 2,410-2,649 ft., 333 bbl. In the Sealy pool Mid-Continent Oil Co.'s No. 2 Sealy, 3,032-37 ft., 135 bbl.

Winkler County

In the Halley pool Skelly Oil Co.'s No. 33 Halley, 2,715-2,800 ft., 28 bbl.

Yoakum County

In the Wasson-Denver field Fred M. Allison's No. 5 Edens, 4,805-5,135 ft., 1,040 bbl. Aloco Oil Co.'s No. 5 Hovencamp, 4,815-5,135 ft., 1,645 bbl. Aloco Oil Co.'s No. 5 Johnson, 4,920-5,236 ft., 822 bbl. Aloco Oil Co.'s No. 5 Smart, 4,855-5,144 ft., 726 bbl. Basin States Oil Co.'s No. 4 Hague, 4,940-5,195 ft., 662 bbl. Carter-Continental's No. 3 Willard, 4,886-5,086 ft., 1,083 bbl. Eastland Oil Co.'s No. 3 Chandler-Skelly, 5,178-5,214 ft., 1,170 bbl. Honolulu Oil Co.-Cascade Petroleum Corp.'s No. 5-741 Willard, 4,991-5,220 ft., 963 bbl. Humble Oil & Refining Co.'s No. 20 Walton, 4,930-5,122 ft., 676 bbl. J. E. Mabee's No. 10 Willard, 4,940-5,185 ft., 1,818 bbl. Magnolia Petroleum Co.'s No. 7 Kendrick, 4,960-5,140 ft., 1,172 bbl. Milhoan Production Co.'s No. 4 Willard, 4,968-5,170 ft., 1,487 bbl. Shell Oil Co., Inc.'s No. 8 Roberts, 4,850-5,200 ft., 762 bbl.

PANHANDLE FIELD COMPLETIONS

Carson County

Magnolia Petroleum Co.'s No. 62 fee 244, 2,970-3,096 ft., 289 bbl. Northern Oil Co.'s No. 8 E. Cooper, 3,088-3,146 ft., 691 bbl. Skelly Oil Co.'s No. 100 Schafer ranch, 3,150-3,210 ft., 358 bbl.

Gray County

Humble Oil & Refining Co.'s No. 9 Merton, 3,170-3,267 ft., 410 bbl. Shell Oil Co., Inc.'s No. 16 Haggard, 3,245-77 ft., 320 bbl. Stanolind Oil & Gas Co.'s No. 9 Merton, 3,245-83 ft., 198 bbl.

Hutchinson County

Power Petroleum Co.'s No. 5 W. B. Haile, 3,005-44 ft., 474 bbl. Stanolind Oil & Gas Co.'s No. 20 H. B. Terry, 2,945-93 ft., 286 bbl. Stanolind Oil & Gas Co.'s No. 10 E. E. Watkins, 2,709-2,878 ft., 386 bbl.

Moore County

Shamrock Oil & Gas Co.'s No. 16 J. T. Sneed, 2,535-2,785 ft., 43,644,000 cu. ft. of gas.

Wheeler County

Smith Brothers Refining Co.'s No. 1 J. K. Ribble, dry and abandoned at total depth of 4,135 ft.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Oct. 30.—Holding considerable attention in the West Central Texas district during the past few weeks has been the Bowles pool on the Taylor-Callahan county line. Developments during the past week indicate that this small but extremely active field will be the scene of considerable development during coming weeks. Since the completion of Bradford & Robertson's No. 1 V. E. Reeves 2 weeks ago for a daily potential of 750 bbl. four new tests have been started, the outcome of which will do much to determine the true potentialities of the field. Considerable lease changing has been carried on recently and several large independent operators are now active in the pool.

Of the new locations staked, three are in the process of drilling. About a mile north of the field Joe Evans is drilling below 500 ft. in No. 1 Gist, SW cor. SE NW Section 18, B.A.L. Survey. Between this outpost and the field proper same operator is drilling below 400 ft. in No. 1 Shepperd. Two offsets have been started to the recently completed 750-bbl. well on the Reeves tract. Just west of their lease, Bradford & Robertson have started No. 2 Reeves. As an east offset S. B. Roberts is drilling ahead in No. 1 Mitchell. Both offsets were recently started and are drilling at relatively shallow depths.

Almost ¼ mile southeast of the field Gallagher & Lawson are preparing to spud No. 1 Thornton, extreme northwest corner of Section 1, S.P. Survey. More than 1¼ miles west and slightly north of the field LeClair Oil Co. abandoned a dry hole, No. 1 Bowles-Cole, at 2,300 ft. The field is producing from the Cook sand at an approxinate depth of 1,730 ft. There are six producing wells in the field and the oil is being marketed to the Moutray Refining Co. at Hawley.

Jones County, by far the most active in West Central Texas several months ago, has dropped back toward its old normal with the declined drilling in the Griffin and Avoca pools. Several outposts are still active in the Griffin pool, but it is nearly drilled up. A dry hole was registered on the west side of the field and in the Avoca townsite when Consolidated Oil Co. abandoned its test in the Cox-Hamilton tract after the Palo Pinto lime formation was penetrated without a show of oil. A new wildcat has been staked west of the Avoca pool by Danciger Oil & Refineries, Inc., and is drilling below 500 ft. It is No. 1 B. P. Davenport, projected to the Palo Pinto lime horizon and is in the CNL NE¼ Section 23, Deaf and Dumb Asylum Lands.

Stephens County centered considerable attention during the week as testing began at the new pool opener by T. G. Shaw on the Stroud tract in the northeast part of the county, and a deep test within the city limits of Breckenridge drilled below 3,400 ft. T. G. Shaw's No. 1 Stroud, northwest quarter of the G. Newton Survey, was swabbing at the rate of 10 to 12 bbl. hourly from the lower Strawn pay drilled from 2,597 to 2,602 ft. Seven-inch casing has been cemented at 2,592 ft., and the well was reported to have produced 180 bbl. of oil during a continuous swabbing period of 36 hours. Pay section has been identified as the Kisinger sand and no water is showing in the well. Tubing was being run for completion, according to last report.

The deep test within the city of Breckenridge is being drilled by Pitzer & West and is a twin well to an old producer recently taken off production after 17 years. The twin is No. 1-B Gonzolus, drilling below 3,400 ft. on a 4,000-ft. contract. In the northwestern part of the county Horowitz & Oldhom, Wichita Falls operators, have moved 12 families into their camp and the men will develop the recently opened Stribling pool. There are five active wells in this field now and several more are preparing to get under way.

Brown County's discovery well of last week, Wirt Davis, W. W. McDonald, and Robert Campbell's No. 1 W. P. Hill, 3½ miles northeast of the Smith-Ellis pool, after coming in for a large flow of oil and gas, settled down and then "went dead." Pumping equipment is being installed for Railroad Commission gage. Pay was drilled from 1,309 to 1,313 ft., total depth.

WEST TEXAS FIELD COMPLETIONS

(24-hour gages)

Crane County

In the McElroy field Gulf Oil Corp.'s No. 14 McElroy, 2,835-3,000 ft., 141 bbl.; old well drilled deeper. In the Tubbs field Humble Oil & Refining Co.'s No. 31 J. B. Tubbs, 4,320-4,420 ft., 5,678 bbl. In the Taylor-Hughes area of the McCamey field Superior Oil Co.'s No. 3 Hughes, 2,408-19 ft., 108 bbl. oil plus 70 per cent water; old well drilled deeper.

Crockett County

In the Crockett pool Gilcrease Oil Co.'s No. 2-13 University, 1,349-1,465 ft., 51 bbl. Gilcrease Oil Co.'s No. 3-13 University, 1,380-1,440 ft., 55 bbl. Gilcrease Oil Co.'s No. 16-13 University, 1,325-1,441 ft., 65 bbl. These were old wells deepened.

Ector County

In the Foster pool Broderick & Calvert's No. 13 Witcher, 4,001-4,172 ft., 1,624 bbl. Lee Drilling Co.'s No. 4 Johnson, 4,225-4,335 ft., 1,473 bbl. Lee Drilling Co.'s No. 5 Johnson, 4,165-4,335 ft., 1,636 bbl. Sunray Oil Co.'s No. 3-C Witcher, 4,052-4,162 ft., 1,894 bbl. In the North Cowden pool M. J. Delaney's No. 6 Smith, 4,205-4,411 ft., 1,323 bbl.

In the Jordan pool E. E. Fogelson's No. 4-B University, 3,410-3,702 ft., 281 bbl. Shell Oil Co.'s No. 6-D University, 3,350-3,662 ft., 1,199 bbl. In the Goldsmith pool Gulf Oil Corp.'s No. 225 Goldsmith, 4,182-4,202 ft., 1,992 bbl. Gulf Oil Corp.'s No. 226 Goldsmith, 4,130-81 ft., 2,524 bbl. In the Harper pool Stanolind Oil & Gas Co.'s No. 29-E E. F. Cowden, 4,045-4,180 ft., 536 bbl. Stanolind Oil & Gas Co.'s No. 25-B E. F. Cowden, 4,015-4,180 ft., 497 bbl.

WEST CENTRAL TEXAS COMPLETIONS

Callahan County

Green & Owens' No. 2 Anthony, 290-94 ft., 10 bbl. Green & Owens' No. 3 Anthony, 292-98 ft., 8 bbl. Kendrick & Van Zandt's No. 1 Johnson, dry and abandoned at 428 ft. Wagon's No. 1 Isenhower, dry and abandoned at total depth of 550 ft. L. A. Warren's No. 1 Huff, dry and abandoned at total depth of 1,712 ft. Woodley Petroleum Co.'s No. 1-C Hearn, dry and abandoned at 845 ft.

Brown County

Derrick No. 1 Harris, dry and abandoned at 2,128 ft.

Comanche County

Gallagher & Lawson's No. 1 Robinson, dry and abandoned at 683 ft.

Jones County

Algord Oil Co.'s No. 1 Gillespie, 3,263-65 ft., 563 bbl. oil, 10 per cent water, in 3 hours. Consolidated Oil Co.'s No. 2 Cox-Hamilton, dry and abandoned at 3,292 ft. Consolidated Oil Co.'s No. 1 Hines, 3,270-77 ft., 168 bbl. oil plus 60 bbl. water in 5 hours. Humble Oil & Refining Co.'s No. 4 Irwin, 2,398-2,403 ft., 448 bbl. in 15 hours. Wichita Production Co.'s No. 2 Daughtry, 1,881-83 ft., 90 bbl.

Palo Pinto County

W. K. Gordon's No. 1 Ringo, 3,545-62 ft., 1,962,000 cu. ft. of gas.

Shackelford County

Fain-McGaha Oil Corp.'s No. 2 Dawson-Conway, 1,490-95 ft., 40 bbl. Fortson & Taylor's No. 3 McCown, 3,205-07 ft., 216 bbl. in 4 hours. Owens-Snebold Oil Corp.'s No. 6 J. S. McKeever, 3,150-97 ft., 520 bbl. 9 hours. Ungren & Frazier's No. 2 W. H. McKeever, 3,166-73 ft., 560 bbl. in 9½ hours. West & Honea's No. 1 Martin, 3,173-93 ft., 403 bbl. oil plus 7 per cent water. Terry's No. 1 Flippen, dry and abandoned at 1,025 ft.

Taylor County

Sprotex Oil's No. 1 Pittmen, 1,728-40 ft., 25 bbl. oil plus 20 bbl. water daily.

Oklahoma Fields

(Continued from Page 68)

Wilcox sand at 5,178-97 ft., total depth, was shot at 5,179-91 ft. and flowed 80 bbl. of oil in 24 hours.

In Pawnee County: Johnson Oil Refining Co.'s No. 1 Rich, NW NE NW Section 28-20-9, had spudded; West's No. 1-A Sewell, SE SE SE Section 32-21-8, was rigging up machine.

Jackson County

Kerbow's No. 2 Danona, NW NW NW Section 6-1s-19w, Tipton field, Jackson County, was bottomed at 2,707 ft., water broke in after a shot at 2,651-63 ft., the hole was junked and it was abandoned.

New work in Jackson County: Harris' No. 1 Cooke, NW NW NE Section 2-1n-20w, building rig; Gulf Oil Corp.'s No. 3 McDaniel, NE SE NE Section 3-1n-20w, moving in rotary tools; same company's No. 2 Barrett, NW NE SW Section 10-1n-20w, rigging up rotary tools.

First Reports

In Oklahoma County Clark's No. 1 Ancell, SW SW SE Section 34-12-3w, was a location.

In Caddo County Ohio Oil Co.'s No. 11 Pau-Kune, NW SE SW Section 3-5-9w, was a location; Aladdin Oil Co.'s No. 1 Wade, SW NE SW Section 3-5-9w, was a rig; McCann's No. 1 Little Chief, NE NE NE Section 3-5-10w, was a location.

In Comanche County Westheimer & Neustadt's No. 3 Watson, SW NE NE Section 24-2n-10w, an old well being deepened from 1,240 ft., was drilling below 1,340 ft.

In Beckham County, West Oak Gas Co.'s No. 1 Eason, SE NW NE Section 11-9-25w, was moving in rotary tools.

Carter County

Shell Oil Co., Inc.'s No. 23 Keck, SW SW NE NE Section 5-4s-3w, Healdton field, Carter County, was completed for 7 bbl. of oil daily at total depth of 1,035 ft.

Texas County

Cabot Carbon Co.'s No. 1 Smith, C E½ W½ SE Section 20-3n-15ecm, Texas County, Oklahoma Panhandle, was completed at 2,670 ft., total depth, producing 18,000,000 cu. ft. of gas daily.

Rocky Mountain Area

By T. R. INGRAM

Lance Creek, Wyo., Well Is Good for 200 Bbl. Per Hour

DENVER, Colo., Oct. 30.—The Lance Creek field in Wyoming had a good completion in the Argo Oil Co.'s No. 10-A Elliott which flowed 200 bbl. an hour through casing and 105 bbl. an hour through tubing from the Leo sand after cementing off an estimated production of 50 bbl. an hour in the Joss sand. Operators will not produce from the Joss sand pending formation of new participating agreement under the unit. Sinclair-Wyoming Oil Co. completed a flowing well in the Lost Soldier field, No. 86-A, which made 210 bbl. in 13 hours. Same company recompleted No. 13 Wertz in Carbon County which was beaned down to 803 bbl. The Osage field had an average completion, and the Osage Trust Co.'s test at Dewey was abandoned.

Colorado reported a wildcat getting under way in Washington County, and the resumption of another test in Logan County. The Ramsey Petroleum Co.'s No. 1 Tighe, in Weld County, which created a sensation in 1932, and status of which has not been known for several years, is being abandoned after opening up and testing.

Montana reported two completions in Cut Bank and three new operations in that field and an equal number in Kevin-Sunburst.

NEW MEXICO

With activity well under way surrounding Westlea Oil Co.'s (Frank M. Farley and associates) new pool opener of 2 weeks ago in the western part of Lea County, attention was turned during the past week to another new field. It is the B. H. Nolen's No. 1-X Iles, 330 ft. from the south and east lines of the SE cor. Section 17-16s-29e, approximately 8 miles northwest of the Grayburg-Jackson pool in Eddy County.

Four new locations were staked in the vicinity of the pool opener while the well itself continued to test. Indicating a daily pumping gage of about 80 bbl., the well pumped 76 bbl. of oil in 20 hours through 2-in. tubing set at 1,818 ft. with perforations at 1,786 ft. The well sanded up and rods and tubing were pulled for cleaning out. Tubing was last reported being rerun preparatory to starting a 48-hour pumping gage. The well was shot with 60 qt. in red sand pay from 1,800 to 1,820 ft.

One-half mile due north of the discovery, Dodson Drilling Co. has completed cellar and pits for No. 1 State, located 330 ft. from east and 2,310 ft. from north line of Section 17-16s-29e. Offsetting the strike to the east, Pittman's No. 1 State was staked and cellar and pits have been completed. A diagonal southeast offset has been started by Knox & Brewer at No. 1 Fred S. Hess. Dodson Drilling Co. has also started work at its No. 1 A. H. McElrath, 330 ft. from the south and west lines of Section 3-16s-29e, 2½ miles northeast of the new pool opener.

In the western part of Lea County and offsetting the Westlea Oil Co. pool opener, Argo Oil Corp.'s No. 1 Texas Co.-State, was last reported running 8¼-in. casing to a total depth of 845 ft. Westlea Oil Co.'s No. 1 Texas Co.-E. C. Cleveland, due south 2,310 ft. from the discovery well, was running 10-in. casing to 40 ft. Three-quarters of a mile southeast of the discovery, Continental Oil Co. has staked its No. 1-A-15 Langston, 660 ft. from the south and west lines of Section 15-20s-32e.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

Allen-Pope-Fair's No. 4-A State, Section 36-17-29, pumped 17 bbl. daily after shot in pay from 3,200-52 ft.

Bassett's No. 1 State, Section 2-18-29, flowed 12 bbl. hourly through open tubing after shot in pay section from 2,630-65 ft.

Franklin Petroleum Corp.'s No. 3-A Yates, Section 6-18-30, flowed 50 bbl. in 10 hours through open tubing after shot in pay section from 2,818-44 ft. Sanders Brothers' No. 1 Murdock, Section 4-18-29, pumped 65 bbl. daily after shot in pay from 2,550 to 2,625 ft.

Yates' No. 2-A Yates, Section 6-18-30, flowed 86 bbl. in 2 hours through ¾-in. choke from pay from 2,778-2,806 ft.

Yates' No. 1 Julia Brainard, Section 3-18-29, flowed 159 bbl. in 4 hours through ¾-in. choke from pay from 2,564 to 2,593 ft. after shot.

Carper Drlg. Co.'s No. 4 Robinson, SE SE SW Sec. 25-16-31. T.D. 4,025 ft.; tstg.
G. R. Burke's No. 1 State, NE NE NW Sec. 36-16-24. Drlg. 1,614 ft.
B. H. Nolem's No. 1 Iles, SE SE SE Sec. 17-16-29. Tstg. 1,803-19 ft.; est. 80 B.O.P.D., pmpg.
Artesia Drlg. Co.'s No. 1 Hoffman, SE SE SE Sec. 14-17-24. S.D.R. 423 ft.
J. R. Cones et al's No. 1 Saunders, SE SE NW Sec. 13-17-27. S.O. 505 ft.; S.D.O. 600 ft.
Danciger O. & R. Co.'s No. 5-A Turner, C N½ NW NW Sec. 19-17-31. S.O.G. 3,409-15 ft.; tstg.
J. E. Hughes' No. 3 Brooks, NE NW NW Sec. 19-17-28. S.D.O. 2,222 ft.
Plains Prod.'s No. 1 Daugherty, SE SE SE Sec. 11-17-27. T.D. 428 ft.; S.D.O.
Republic Prod.'s No. 3-B Robison, SE SE SE Sec. 25-17-29. S.S.O. 3,165 ft.; shot with 40 qt.; est. 4 B.O. P.D.; tstg.
Plains Prod. Co.'s No. 1 Massie, C SW SW Sec. 27-18-29. S.D.R. 2,095 ft.; S.O. 2,075-83 ft.
Barney Cockburn's No. 1 Graham-State, C NE NE Sec. 16-18-31. Drk.
L. E. Elliott's No. 1 Elliott, SE SE SE Sec. 24-18-29. S.S.O. 3,255-75 ft.; drlg. 3,597 ft.
Franklin Pet. Corp.'s No. 1 Masteller, NW NW NE Sec. 7-18-30. Loc.
Franklin Pet. Corp.'s No. 1 Cappedge, NW SW NW Sec. 5-18-30. S.D.O. 3,092 ft.
E. S. McAuliff's No. 1 Coates, C SE NE Sec. 3-18-23. S.D. 1,079 ft.
Me-Tex et al's No. 1-B Ballard, C NW NW Sec. 8-18-29. T.D. 3,017 ft.; P.B. 2,635 ft.; est. 30 B.O.P.D. while C.O.; tstg.
Fred Turner's No. 1 Nickson, C NE NE Sec. 30-18-26. S.D.O. 2,150 ft.
Underwood & Sanders' No. 2 Miller, SW NW NW Sec. 4-18-29. T.D. 2,405 ft.; milling csg. 1,800 ft.; jnkd. hole; skidded 50 ft. east; S.D.R. 1,660 ft.
J. W. Elliott's No. 1 Cannon (O.W.D.D.), C SW SE Sec. 4-19-30. 2,355 ft.
Trojan Oil Co.'s No. 1 Grant, SW SW NE Sec. 33-20s-25e. S.O. 1,530 ft.; S.D.R. 1,580 ft.
Dodson Drlg. Co.'s No. 1 State, 2,310 ft. from N and 330 ft. from E lines of Sec. 17-16-29, ½ mile N of Nolen's No. 1 Iles discovery well. C.&P.
Pittman's No. 1 State, 330 ft. from SW cor. Sec. 17-16-29; east offset to Nolen pool opener. Loc.
Dodson Drlg. Co.'s No. 1 A. H. McElrath, 330 ft. from S and W lines of Sec. 3-16-29, 2½ miles NE of Nolen pool opener. C.&P.

Lea County

Skelly Oil Co.'s No. 2-Q State, Section 36-16-36, flowed 251 bbl. in 24 hours through ½-in. choke from pay from 4,650 to 5,094 ft. Skelly Oil Co.'s No. 3-O State, Section 31-16-37, flowed 630 bbl. in 16 hours through ¾-in. choke from pay from 4,912 to 5,108 ft.

Amerada Petroleum Corp.'s No. 4 Johnson, Section 27-24-37, flowed 112 bbl. daily naturally through 16/64-in. choke from pay at 3,358-3,500 ft. Culbertson & Irwin's No. 2 Martin, Section 31-24-37, flowed 72 bbl. in 12 hours through tubing after shot from 3,225 to 3,545 ft.

Danglade & Clower's No. 2-B Glier, Section 33-22-37, flowed 75 bbl. daily through ½-in. choke from pay at 3,530 to 3,680 ft.

Devonian Oil Co.'s No. 2 Christmas, Section 28-22-37, flowed 65 bbl. daily through open tubing after shot in pay from 3,501 to 3,690 ft. Repollo Oil Co.'s No. 2 H. S. Turner, Section 29-21-37, flowed 190 bbl. in 6 hours through open tubing after acid in pay from 3,725 to 3,780 ft.

Stanolind Oil & Gas Co.'s No. 1-C Farnsworth, Section 4-26-37, made 4,800,000 cu. ft. gas daily, naturally, through open casing from pay from 2,815 to 3,160 ft.

Frank Farley's No. 1-A State, Sec. 18-21s-30e. Prep. drill plug; sat. 2,629-31 ft.; new pool opener; flwd. 1,000 B.O. in 16 hrs.; est. 1,500 B.O.P.D.; shut in for storage.
Maljamar O. & G. Co.'s No. 2 Mitchell, SW SE SW Sec. 5-17-32. T.D. 4,498 ft.; P.B. 3,862 ft.; S.I.; P.B. depth 4,003 ft.
Ohio Oil Co.'s No. 1 State-Staplin, C SE NW Sec. 19-17-35. Drlg. 4,763 ft.
Continental Oil Co.'s No. 8 Britt B-15, C W½ NW SE Sec. 15-20-37. Tstg. 3,882 ft.; 73 B.O. in 7 hours. after acd.; tstg.
Wilson Oil Co.'s No. 1 Shell-State, C NE SW Sec. 7-21-35. T.D. 3,736 ft.; flwd. 51 B.O.P.D.; tstg. 3,736 ft.
Peters & Elder's No. 3 Brunson, SW SW SW Sec. 3-22-37. Flwd. 42 B.O. in 7 hrs.; T.D. 3,742 ft.; tstg.
Skelly Oil Co.'s No. 1 Sherrell, C SW SW Sec. 31-24-37. Drlg. 1,629 ft.
Anderson-Prichard Oil Corp.'s No. 9 Wells, C SW NE Sec. 6-25-37. P.B. 3,394 ft.; acid. with 1,000 gal.; 17 bbl. fluid, 40% wtr. on gas lift; tstg.
Argo Oil Corp.'s No. 1 Texas Co.-State, west offset to Westlea Oil Co. pool opener. Rng. csg. 945 ft.
Westlea Oil Co.'s No. 1 Texas Co.-Cleveland, 2,310 ft. S of Westlea pool opener and 330 ft. from N and 1,980 ft. from W line of Sec. 21-20s-32e. Rng. csg. at 400 ft.
Continental Oil Co.'s No. 1-A-15 Langston, 660 ft. from S and W lines of Sec. 15-20s-32e, ¾ mile southeast of Westlea pool opener. Loc.

Chaves County

G. H. Cowden's No. 1 Brunson, 330 ft. N and W lines, Sec. 27-9s-30e. C.&P.
R. M. Baker's No. 1 Baker, NW NW NW Sec. 10-19-30. R.U. and S.D.
Caudill & French's No. 1-A Smith (O.W.D.D.), Sec. 1-4-29. Prep. to cmt. off csg. from 3,336-70 ft.; drlg. by csg. 3,699 ft.
E. J. Fisher's No. 1 Hill, CSL S½ Sec. 8-15-25. S.D.O. 850 ft.
Nay Hightower's No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 3,445 ft.; P.B. 3,430 ft.; S.D.O.
Tarkenton Bros.' No. 1 Peters, SE SE NW Sec. 33-11-25. S.S.O. 1,280-85 ft.; drlg. 1,496 ft.
Western Minerals, Inc., No. 1 Dow, C SW NW Sec. 27-10-30. S.O. 3,920-25 ft.; S.D.R. 4,090 ft.

Dona Ana County

Picacho O. & G. Co.'s No. 12 Armstrong, Sec. 15-23s-1w. S.D. 2,410 ft., T.D.; repairs.
Slack & Mahres' No. 1 Simmons, Sec. 35-22s-5e. S.D. 2,785 ft., T.D.; repairs.

Luna County

O. D. Berry's No. 1 Berry, SE SE SW Sec. 33-22s-10w. S.D.O. 1,000 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc.'s No. 2 North Albuquerque, NE SE NW Sec. 19-11n-4e. Drlg. below 4,600 ft.

San Juan County

Wells & Noland's No. 1 Rinehart, C NE NE Section 21-29n-11w, Bloomfield district, was dry and abandoned at 700 ft.

Kutz Deep Test, Inc.'s No. 1 Govt., C NW NW Sec. 28-28n-10w. Drlg. 300 ft.
Congress Oil Co.'s No. 2 Govt., Sec. 18-28n-11w. Drlg. 1,425 ft.
Continental Oil Co.'s No. 98 Rattlesnake, NE SE SE Sec. 12-29n-19w. T.D. 820 ft.; rng. 7-in.
Angel Peak Oil Co.'s No. 8 Govt., C NW SW Sec. 13-28n-11w. T.D. 1,420 ft.; R.U. new rig.
Continental Oil Co.'s No. 100 Rattlesnake, NE NW NE Sec. 2-29n-19w. Drlg. 3,865 ft.

San Miguel County

Southwest Drlg., Inc.'s No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 2,125 ft.; cmtg. hole after sdtrkg. bit.

Valencia County

C. A. Grober et al's No. 1 Fuqua, NE NE Sec. 19-5n-3e. Drlg. 3,821 ft. in upper Penn.

COLORADO

Adams County

Derby Dome O. & G. Co.'s No. 2 Baxter, C SE SW Sec. 2-3s-66w. T.D. 62 ft.; R.U. to res.

Custer County

Henry Donnelly's No. 1 Hodge, SE NE Sec. 26-21s-69w. Drlg. below 1,100 ft.

El Paso County

F. F. Hintze et al's No. 1 State, CEL SE SE Sec. 16-11s-66w. Drlg. 131 ft.

Fremont County

T. E. Maloney's No. 1, SE NW Sec. 34-19s-69w. S.D. 1,850 ft. after rng. 1,300 ft. of 5⅜-in. and 550 ft. of 4½-in.
Waterville Oil Co.'s No. 2 Persons, CWL NE NE Sec. 17-19s-69w. S.D. 330 ft.

Larimer County

Continental Oil Co.'s No. 1 Meyer, SW SE SW Sec. 19-

8n-68w. T.D. 5,206 ft.; P.B. to 4,686 ft.; shot with 20 qt. at 4,464-4,686 ft.; W.O. pmp. equip.

Las Animas County

Hulme-Johnston-Allison's No. 1 Azar, SE SE NW Sec. 27-34n-58w. Drlg. reddish sd. at 2,180 ft.

La Platte County

Nick Spatter's No. 1-X Bryce, C SW SW Sec. 31-33n-9w. T.D. 2,422 ft.; fsg. underreamer.

Logan County

The West Plains Development Co.'s test on the West Plains structure, which was shut down last April to reorganize, is reported to be ready to resume and to have purchased strings of 10, 8 and 6-in. casing with which to complete the hole. The 10-in. is to be run around 2,000 ft. Location is on the Sheldon farm in the SE NW SW Section 3-10n-55w.

Park County

South Park Oil Co.'s No. 1 Lemar, NE NE SE Sec. 34-11s-75w. T.D. 7,072 ft.; cmtd. cave; drlg. plug.

Moffat County

Cooperative O. & G. Co.'s No. 1 Gossard, CWL E½ E½ Sec. 29-5n-93w. Spd. and S.D.; will skid mch. and bld. standard rig.

Steamboat Springs Synd.'s No. 1 Sutton, NE NE SW Sec. 1-5n-96w. S.D. 2,125 ft. for csg.; H.F. brackish wtr. in sd. (probably the Sundance); T.D. 1,780 ft.

Rio Blanco County

Texas Co.-California Co.'s No. 3 Unit, NE NE NE Sec. 27-3n-94w. Cmtd. 20-in. at 32 ft.; W.O.C.

Buford Oil Co.'s No. 1 Govt., C SW SW Sec. 16-1n-91w. Drlg. blk. and green sh. 4,020 ft.

Routt County

L. C. Craig and L. C. Moore's No. 1-X Irwin, C SW NE Sec. 33-7n-85w. Drlg. 2,090 ft.

Washington County

A wildcat located in the Thurman district near the southern boundary of Washington County, in a district in which there has been little or no prospecting, has commenced drilling Thurman Oil Trust's No. 1 Joseph Ruby, NW NW SW Section 3-5s-52w. It started in an 8-in. hole to go to the Hygiene sand expected at around 1,500 ft. It is a cable-tool operation. The interests have 3,000 acres in leases on record. The trust includes W. C. Pritchfield, A. R. Pearson, and P. I. Venard, of Denver. Mr. Pearson is associated with the Denver Propane Gas Agency.

Thurman Oil Trust's No. 1 Ruby, NW NW SW Sec. 3-5s-52w. T.D. 140 ft.; fsg. for bit.

Weld County

The Ramsey Petroleum Co.'s No. 1 Tighe (St. Anthony), SW NE SE Section 15-7n-59w, in the New Raymer district, which created widespread interest in 1932 when it showed for 6,300,000 cu. ft. of gas per day in the Muddy sand at 6,672-92 ft., and when deepened into the top of the Dakota sand flowed by heads at intervals of 10 minutes, is to be plugged and abandoned. The status of the well has been unknown for a number of years and recently the Ramsey interests made a contract with the American Pipe & Supply Co., of Denver, to take over the well and some nearby acreage, to make a test and ascertain the facts.

After encountering the gas in 1932 in the Muddy sand, drilling was continued to the Dakota. It is believed to have penetrated several feet of the last named formation before the oil appeared in the pit. The sand then was cored from 6,760 to 6,765 ft. and showed heavy saturation. Reliable information reported the well actually flowed better than 1,000 bbl. per day. It was then killed and the 5-⅞-in. casing was run to 6,722 ft. and perforated for 5 ft. at the bottom and opposite the Muddy gas sand. After going through a 3-ft. break it went back into a soft sand showing water. Cement was run in an attempt to bridge the hole in the 3-ft. break, but this did not prove successful and the hole was plugged back and completed as a gas well in the Muddy.

During the past few weeks the well was cleaned out and tested. Julius Goodstein, for the American Pipe & Supply Co., says that it was given an extensive bailing test in which it showed about 25 per cent oil and 75 per cent water in the bailer each time it was run. This water, he says, is coming from the Dakota according to the log from which he was working, and not the gas sand. The latter, according to his information, was cemented off several years ago. This, however, is not shown in available records. It was decided that on account of the quantity of water in proportion to the oil from the 5-ft. sand it would be difficult to shut it off and that the pipe is being pulled to abandon. Subsequently Ramsey drilled another well ¾ mile to the southwest which proved to be running low and was abandoned. A test to the east of the gasser was planned for this spring, but did not materialize. Whether No. 1 Tighe was a flank well on the west side of the structure, as many contended, therefore has never been determined. The operation started one of the most extensive drilling campaigns eastern Colorado had experienced up to that time. It appears that water has been standing on the sand in the Tighe well for a number of years.

WYOMING

Big Horn County

Yale Oil Corp. has released a location for No. 2 Jones in the Garland field. It is a north offset to the Portland associates and Stock Oil Co.'s No. 1, completed in August 1931, for 1,000 bbl. per day in the Madison lime at 3,538-4,304 ft.

Yale Oil Corp.'s No. 2 Jones, Lot 59, approx. CEL NE SE Sec. 29-56n-97w. Cmtd. 13-in. at 79 ft. (first report).

Carbon County

Sinclair-Wyoming Oil Co.'s No. 13 Wertz, NE NW NW Section 7-26n-89w, Wertz field, was recompleted at 6,230 ft. after deepening from 6,065 ft. Open-flow gage was not reported, but it was beaned down to 803 bbl. per day. It was originally completed last July for 129 bbl. per hour. The wells in that area have been showing a big increase upon going deeper into the Tensleep.

Frank M. Johnston's No. 1 Govt., C SE SE Sec. 22-24n-88w. Drlg. 875 ft.

Martin & Gaylord's No. 1 Horne Bros., CNL NW SW Sec. 22-22n-78w. T.D. 990 ft.; 7,300,000 cu. ft. gas in Muddy; T. 750 ft.

Ohio Oil Co.'s No. 1 University, SW SW SW Sec. 26-20n-78w. Drlg. 3,407 ft.

Albert Dev. Synd.'s No. 1 Boeke, SW NW Sec. 18-25n-79w. Drlg. 360 ft.

Producers Oil Co.'s No. 1 Lake Valley, CNL Sec. 14-20n-88w. S.D. 3,610 ft.

Converse County

New Era Fuel Co.'s No. 1 Pestal, SE NE NE Sec. 32-32n-69w. Drlg. 565 ft.; S.O. 535 ft.; 8¼-in. cmtd. 555 ft.

Blue Ridge Oil Co.'s No. 1 Prokesh, SW NW SE Sec. 29-32n-69w. Drlg. 600 ft.; carrying 8¼-in. at 563 ft.

Fremont County

Sinclair-Wyoming Oil Co.'s No. 11 Sand Draw Unit, CSL NE NE Sec. 15-32n-95w. Drlg. below 3,700 ft.

Consolidated Oil Properties' No. 3 Ewart, C SW SE Sec. 16-1n-1w. Drlg. in Embar 1,420 ft.

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Hot Springs County

John W. Selby's No. 1 Kyne, SW NW Sec. 22-43n-92w. T.D. 409 ft.; rng. 8¼-in. to set on bttm.
J. W. Bales' No. 1 Govt., CWL NW SE Sec. 21-42n-90w. Drlg. 465 ft.

Lincoln County

H. C. Harris et al's No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. L. 2,390 ft.

Natrona County

Continental Oil Co.'s No. 1 McGrath, C NW SW Sec. 15-34n-78w. Drlg. 6,265 ft.
Connelly Drlg. Co.'s No. 1 State, SW SW NW Sec. 36-36n-81w. Drlg. below 1,300 ft.
Summit Oil Co.'s No. 2 Govt., NW NE NE Sec. 21-33n-80w. S.D. 960 ft.

Niobrara County

The Argo Oil Co.'s No. 10-A Elliott, SE NW SE Section 5-35n-65w, Lance Creek, is being completed as an excellent producer in the Leo sand after plugging off the Joss sand. It was drilled to 5,541 ft. and after finding good saturation in the Joss sand, it was plugged back to 5,450 ft. and completed in the Leo. It flowed an average of 200 bbl. an hour through the casing and through the tubing it made 105 bbl. an hour for 14 hours. The Joss sand was not tested, but was estimated at 50 bbl. an hour.

Heretofore it had been the practice to complete the wells in the Leo. Last February the Minnelusa Oil Corp.'s No. 2 Joss, SE NE SW Section 6-35n-65w, went deeper and picked up a new sand at 5,340-52 ft. which made 30 bbl. an hour. The horizon was given the name of the Joss sand. The extent of the new pay was unknown, but since then several wells have drilled that horizon to determine its possibilities. No. 10-A Elliott is a mile to the east of No. 2 Joss, and with other wells indicate that the sand will be a good producer over a considerable area.

Unit operators have agreed not to produce the new pay at this time, but to wait until after a participating area is formed for that horizon under the unit agreement. In the meantime wells are being drilled down to the Joss for exploratory purposes after which that sand is plugged off and the wells are completed in the Leo. That the new pay extends over a wide area was indicated when the Argo company's No. 7 Ford, NW SE NW Section 33-36n-65w, 2 miles to the north and on the edge of the proven area, gaged 2,439 bbl. in 24 hours from the Joss sand.

The possibilities of the Lance Creek field have not been fully determined, but that it will be a more prolific producer than originally expected is now reasonably certain. The proven reserves at the beginning of the year were estimated at 50,000,000 bbl. from the Sundance, Converse and Leo sands. These have now been increased around 70,000,000 bbl., with the Bell sand, which has been drilled by only one of two wells, not included. This sand is expected to be productive in at least a part of the field. It is in the Madison lime.

Argo Oil Co.'s No. 1 Ong, SE SE SW Sec. 31-36n-65w. Drlg. 325 ft.
A. B. Cobb & Co.'s No. 5 Novick, NE NE NW Sec. 6-35n-65w. R.U.R.
Ohio Oil Co.'s No. 13 Carrie Putnam, C NW NW Sec. 4-35n-65w. Drk.; W.O. rig.
Continental Oil Co.'s No. 6 Sam Joss, NW NW NE Sec. 6-35n-65w. Drlg. 1,740 ft.
Continental Oil Co.'s No. 6-A Dielman, NW NE NE Sec. 7-35n-65w. Spd. and S.D.; W.O. equip.
Continental Oil Co.'s No. 5-A Dielman, SE NW NW Sec. 8-35n-65w. Drk.; W.O. rig.
Ohio Oil Co.'s No. 7 Leo O.P.C.-16, NE NE SW Sec. 35-36n-65w. Drlg. 3,847 ft.
H. D. Moore et al's No. 1 Berggren, SE NW Sec. 23-35n-63w. T.D. 2,242 ft.; T. Leo 2,228 ft.; rng. 7-in.
Minnelusa Oil Corp.-MacKinnie Oil & Drlg. Co.'s No. 1 Thompson, NE NW NE Sec. 7-35n-65w. Drlg. 4,316 ft.
Minnelusa Oil Corp.-MacKinnie Oil & Drlg. Co.'s No. 6 Thompson, NE NW SE Sec. 7-35n-65w. Drlg. 4,317 ft.
Continental Oil Co.'s No. 4 Apex-1, NW NE NE Sec. 34-36n-65w. Drlg. 4,901 ft.; T. Converse 4,748 ft.
Continental Oil Co.'s No. 5 Apex-3, SE NE SW Sec. 34-36n-65w. Drlg. 5,340 ft.
Argo Oil Co.'s No. 11-B Elliott, NE NE SW Sec. 5-35n-65w. Drlg. 4,763 ft.; T. Converse 4,701 ft.
Continental Oil Co.'s No. 4-B Diehlman, SW SW NW Sec. 8-35n-65w. Drlg. 5,329 ft.; T. r.b. 4,385 ft.
Ohio Oil Co.'s No. 13 Lamb-Acct. 1, NW SE NE Sec. 5-35n-65w. T.D. 5,345 ft.; tstg.; swbd. 240 bbl. in 24 hrs. from Leo at 5,270-5,330 ft.
C. L. Price's No. 2 Lamb, SE NW NW Sec. 7-35n-65w. Drlg. 5,340 ft.; lower Converse 4,992-5,024 ft.; sat. sd. 5,020-24 ft.
A. B. Cobb's No. 4 Novick, SE SE SW Sec. 6-35n-65w. S.D. 5,380 ft.
F. F. Hintze et al's No. 1 Wright-Govt., C NW SE Sec. 30-36n-63w. T.D. 4,964 ft.; cmtd. 7-in. at 4,617 ft. and perf. to test.
Fall River Prod. & Roy. Co.'s No. 1 Govt., CSL SE SE Sec. 35-40n-61w. T.D. 2,662 ft.; good S.O.; prep. to run 8-in.

Park County

Stanolind O. & G. Co.'s No. 1 Govt., NE NE NE Sec. 2-47n-100w. T.D. 1,872 ft.; D.P. stuck.
Mule Creek Oil Co.'s No. 1, Lot 51, Sec. 9-46n-101w. Drlg. 240 ft.

Sublette County

California Co.'s No. 1 Unit 1, the deep test in the Pinedale district, is preparing to make a drill-stem test of a show of gas after cementing the 7-in. at 8,550 ft. Total depth is 10,003 ft.

Joe Minton et al's No. 2 Govt., SW NE NE Sec. 28-27n-113w. M.I.M.
Wyoming Pet. Corp.'s No. 1 Budd, C NE NE Sec. 10-29n-113w. Drlg. 2,869 ft.
Texas Co.'s No. 1-D, SW NE NE Sec. 27-27n-113w. Drlg. 90 ft.
Wyoming Pet. Corp.'s No. 2 Govt., SE cor. Sec. 3-29n-113w. Spdg.
California Co.'s No. 1 Unit 1, C SW NE Sec. 14-31n-109w. T.D. 10,003 ft.; cmtd. 7-in. at 8,550 ft.; W.O.C.

Sweetwater County

The Sinclair-Wyoming Oil Co.'s No. 86-A, SE NE NE Section 10-26n-90w, Lost Soldier field, was completed at 1,991 ft. in the Sundance, topped at 1,941 ft., and flowed 210 bbl. in 13 hours through the tubing on gas lift.

Sinclair-Wyoming Oil Co.'s No. 87-A, SW SE SE Sec. 3-26n-90w. Drlg. 1,834 ft.
Mountain Fuel Supply Co.'s No. 1 Mosey, NW NW NW Sec. 18-18n-104w. T.D. 2,610 ft.; cmtd. csg.; perf.; W.O.C.
Wyoming-Calif. Pet. Co.'s No. 2 Govt., CWL NW SW Sec. 24-17n-104w. Drlg. 2,845 ft., T. Fron. 2,633 ft.; 2,100 ft. W.I.H. at 2,633-43 ft.

Uinta County

Stove Creek Oil Co.'s No. 1 Govt., NE SW NE Sec. 26-14n-119w. Drlg. 1,690 ft.

Weston County

The Osage field had one completion in the Federal Oil Co.'s No. 10-X, CNL NE SE Section 15-46n-64w, for 20 bbl. per day naturally from sand at 2,140-70 ft.

In the Dewey district, Osage Trust Co.'s No. 1 Darrow, NW NW SE Section 7-41n-60w, was abandoned at 2,340 ft. It had a show of oil at 2,295 ft. and gas at 2,313 ft., but not in commercial quantities. Rig was skidded one location west for No. 2 Darrow.

Gose Oil Synd.'s No. 1, NE cor. Sec. 28-47n-63w. Cmtd. 4½-in. at 4,918 ft.
Osage Trust Co.'s No. 2 Darrow, NE NE SW Sec. 7-41n-60w. R.U.R. (first report).
Butcher Bros.' No. 4, CWL SW NE Sec. 16-43n-63w. Drlg. below 100 ft.

Hugh Updike's No. 4, CEL NE NE Sec. 36-46n-64w. Drlg. below 800 ft.
Bruce C. Teeter's No. 1 State, SW SW SE Sec. 36-32n-61w. Recmtd. 8¼-in. at 1,860 ft.

MONTANA

Blaine County

Montana Gas Corp.'s No. 1 Bowes, NE SE NW Sec. 34-32n-19e. Spdg. (first report).

Carbon County

Under an operating agreement between the Minnelusa Oil Corp. and the Henderson Producing Co., these two concerns have resumed drilling No. 1-H-11 Elk-11, on the Elk Basin structure. The well was drilled to 1,810 ft. in 1938 by the Henderson company, at which depth the well showed for a small producer in the second Wall Creek sand. It will be carried to the Dakota in which gas is found on the Wyoming side of the boundary.

Minnelusa Oil Corp.-Henderson Prod. Co.'s No. 1-H-11 Elk-11, SE SE NW Sec. 35-9s-23e. T.D. 1,810 ft.; res. to go to Dakota.
R. C. Tarrant's No. 2 McKay, C SE NW Sec. 4-6s-18e. T.D. 2,290 ft.; C.O. to land 8-in. on bttm.
R. C. Tarrant's No. 2 Heare, NW SE NW Sec. 14-6s-19e. T.D. 1,300 ft.; C.O. 460 ft.
Miracle Oil Co.'s No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,381 ft.; C.O. 1,516 ft.

Flathead County

Clark W. Beauchamp's No. 1, CSL SW SW Sec. 2-27n-20e. S.D. 150 ft.; to M.I. rig.

Fergus County

Baugham & Singley's No. 1 Skaags, C NW SW Sec. 7-15n-20e. T.D. 1,090 ft.; rng. 3⅞-in. to bttm.

Hill County

J. Gudgel's No. 1 Mancin, SE NE NW Sec. 19-37n-15e. Drlg. 1,160 ft.; S.G.

Glacier County

The Glacier Production Co.'s No. 2 Barrington, C NW NE Section 19-33n-5w, Cut Bank field, swabbed 168 bbl. first 24 hours at 2,928 ft. after plugging back from 2,932 ft. The Sunburst at 2,862 ft. had a slight show of oil. Upper Cut Bank was at 2,882-2,917 ft. and lower Cut Bank was at 2,917-28 ft.

The Texas Co.'s No. 8 Morrison, CEL NW NE Section 22-35n-6w, swabbed 123 bbl. first 15 hours at 2,929 ft., total depth, and is a completion in the Cut Bank.

M. R. Wagner's No. 2 Tribal-173 lost the hole at 570 ft. when it was unable to shut off surface gravel, and was abandoned. Rig was skidded.

M. R. Wagner, trustee's No. 2-X Tribal-173, NE SE SE Sec. 12-32n-6w. Skdg. rig to loc.
Glacier Prod. Co.'s No. 2 Corrigeux, SW SW NW Sec. 21-33n-5w. Loc.
Glacier Prod. Co.'s No. 2 Rigney, C SE SW Sec. 35-36n-6w. R.O.G.
Nadeau Bros.' No. 6 Farmers State Bank, 440 ft. from E line, 1,320 ft. from N line, Sec. 17-33n-5w. Cmtd. 10¾-in. at 553 ft.; Colo. 545 ft.
R. C. Jeffries-Yukon Oil Co.'s No. 1 Clark, C SW NW Sec. 34-35n-6w. Cmtd. 10¾-in. at 594 ft.; Colo. 590 ft.
Texas Co.'s No. 9 Tribal-122, CSL SW SW Sec. 32-33n-5w. Drlg. 45 ft.
Texas Co.'s No. 3 Hessler, C SE NW Sec. 20-33n-5w. M.I.M.
A. B. Cobb-T. T. Co.'s No. 1 Bilstad, C NW SE Sec. 4-36n-5w. Drlg. 2,535 ft.
Texas Co.'s No. 1 Ammerman, CWL SW SE Sec. 26-36n-6w. Drlg. 1,810 ft.
Glacier Prod. Co.'s No. 1 Stott, C SE NW Sec. 34-33n-5w. Drlg. 2,725 ft.
Texas Co.'s No. 2 Bonnet, C SW SE Sec. 8-32n-5w. Drlg. 2,362 ft.

Toole County

Coolidge & Coolidge's No. 1 Forseth, CEL SE NE Sec. 8-35n-4e. Spdg. 65 ft.
Hannah-Porter's No. 2 Estenson, NE NW SE Sec. 19-33n-1w. Drlg. 160 ft.
G. & A. Oil Co.'s No. 3 Aronow, CWL SE NE Sec. 16-35n-3w. Drlg. 420 ft.
Superior Pet. Co.'s No. 12 Aronow, NW NW SW Sec. 12-35n-3w. Drlg. 1,208 ft.
Henry Vander Pas' No. 3 Ward, NE SW NW Sec. 28-35n-3w. Drlg. 530 ft.
G. & A. Oil Co.'s No. 14 Goeddertz, CEL SE SW Sec. 23-35n-3w. Drlg. 1,600 ft.; 7-in. at 1,490 ft.
S. T. Scotland's No. 3 McNamar, NW NE SW Sec. 29-35n-3w. Drlg. 450 ft. in new hole.
A. Beardslee's No. 10 Swears, C SW NW Sec. 9-35n-2w. T.D. 1,723 ft.; U.R. 6⅝-in. for W.S.O.
Frazer & Smith's No. 2 Van Note, NE SW NW Sec. 30-35n-2e. Drlg. 1,000 ft.
Coolidge & Coolidge's No. 1 Maley, SW NE SE Sec. 31-36n-1w. S.D. 100 ft.
Italo Pet. Corp.'s No. 1 Cornett, C SW NW Sec. 30-37n-3w. T.D. 2,675 ft.; 2,000 ft. W.I.H.; U.R. 7-in. at 2,600 ft.
Morton & Shaw's No. 1 Ellingson, NE NE NW Sec. 23-35n-3w. S.D. 400 ft.
Kippen O. & G. Co.'s (formerly Lewiston Synd.) No. 1 Solberg, SE SW NE Sec. 20-35n-3w. S.D. 1,904 ft.
W. E. Rice Co.'s No. 4 Kearns, Lease 8, C W½ E½ SE Sec. 18-35n-2w. T.D. 1,570 ft.; rng. 6⅝-in.
C. L. Smith, Agt.'s No. 1 Govt., SW SE NW Sec. 13-35n-2w. S.D. 1,345 ft.
R. G. Parrent's No. 1 Holbrook, C NW NE Sec. 2-36n-3w. S.D. 1,370 ft.

Yellowstone County

Riverton Oil Co.'s No. 1 Fox, CEL NW NE Sec. 14-2n-23e. Drlg. 2,150 ft.

UTAH

Daggett County

Mountain Fuel Supply Co. has released a location for No. 4 Murphy in the Clay Basin gas field. It will test out the productive area on the southwest side, being a mile to the southeast of No. 1 Smith in Section 20, and ¾ mile west and north of No. 1 Lauzer in Section 22.

Mountain Fuel Supply Co.'s No. 4 Murphy, SW SE SW Sec. 21-3n-24e. Loc. (first report).

SOUTH DAKOTA

Harding County

South Dakota State Roy. Co.'s No. 1 State, SW NW Sec. 35-18n-1e. Drlg. 6,340 ft.

Michigan Fields

(Continued from Page 64)

Wright Township (8n-13w)—Twin Drilling Co.'s No. 1 K. O'Hearn, NW NE SW Section 34, a wildcat test, was dry and abandoned at 1,921 ft.

Van Buren County

Bangor Township (2s-16w)—Blood & Hendershott temporarily abandoned at about 1,027 ft. No. 3 Westcott, SW SW NE Section 28. Anna Prather's No. 1 Shugars, SE NW SW Section 21, rated 200 bbl. a day after an acid treatment. Total depth was 1,004½ ft.

Columbia Township (1s-15w)—Clapsaddle, Harris & Fulton's No. 6 Pepper, NW NE NE Section 23, completed at a depth of 1,186 ft., did 200 bbl. a day after acid treatment, but J. Brooke Reed's No. 1 Berlamont Telephone Co.-Homer Cooley, SE SE SE Section 12, was good for only 10 bbl. a day. Its depth is 1,204 ft.

Porter Township (4s-13w)—R. T. & E. Corp.'s No. 1 J. J. Theisen, SW SW SW Section 18, did 35 bbl. a day after acid. It is a wildcat discovery well and is expected to induce some revival of the Van Buren County drilling play.

Illinois Fields

(Continued from Page 61)

C E½ NE SE Section 24-5n-9e, drilling at 2,950 ft.

In Lawrence County George Herbst's No. 1 Prather, C NE SE Section 18-4n-10w, spudded. Sutherland and others' No. 1 Leathers, NE SE SE Section 19-2n-11w, Benoist sand at 1,842 ft.; cored 1,845-50 ft., bleeding sand with salty taste, shut down for orders.

In Marion County Dunbar & Wingate's No. 1 France, NE NW SW Section 1-4n-4e, drilling at 2,250 ft.

In Edwards County Clyde E. Smith and J. J. Broadus' No. 1 Broster, SE cor. SW NW SE Section 34-2s-14w, total depth 2,634 ft., running tubing. A. B. Potter and others' No. 1 Broster, SW cor. NW SE Section 34-2s-14w, coring at 2,654 ft. Roscoe Jones' No. 1 Schroeder, SE SW SE Section 27-2s-14w, shut down for orders at 1,950 ft. Noah & Morrison's No. 1 Brown, NW NE NW Section 15-3s-10e, drilling at 2,740 ft.

In Wayne County New Penn's No. 1 Xanders, NE SW SW Section 7-2s-9e, drilling at 4,724 ft. Rockwood's No. 1 Young, deep test, SE SW NE Section 29-2s-7e, total depth 3,408 ft., shut down for orders.

In White County Kingwood Oil Co.'s No. 1 Seifreid, NW SE SW Section 30-3s-11e, drilling at 3,110 ft., McClosky lime at 3,073-79 ft. Kingwood Oil Co.'s No. 1 Fearn, SW NE NW Section 19-3s-11e, perforated casing at 3,073-83 ft., pumped 35 bbl. of oil, with no water, in 24 hours; testing; total depth 3,221 ft. H. H. Weinert, Inc.'s No. 1 Newby, SE SE NW Section 31-3s-8e, drilling at 3,351 ft.; Aux Vases sand top at 3,205 ft. Texas Co.'s No. 1 Poorman, SW SE SE Section 31-3s-8e, total depth 3,243 ft., rigging up standard tools. Roche, Voyles and others' No. 1 Lewis, NW SE NE Section 31-3s-8e, plugged back to 3,374 ft., pumped 1 bbl. of oil and 3 bbl. of water per hour, testing. Riley & Lacy's No. 1 Dauby, C S½ SW NE Section 31-3s-8e. total depth 3,424 ft., acidized with 2,000 gal., flowed 45 bbl. per hour and then quit; will put on pump. H. H. Weinert, Inc.'s No. 2 Miller Brothers and Andrews, C N½ SW NW Section 29-3s-8e, shut down for orders at 3,434 ft. Kingwood Oil Co.'s No. 1 Metcalf, SW NE SW Section 31-3s-11e, shut down for orders at 3,206 ft. D. F. Morrow's No. 3 Cox, NW NE NE Section 6-4s-8e, total depth 3,285 ft., pumped 16 bbl. of fluid in 24 hours, 40 per cent water; testing. Lakey & Wilson's No. 1 Rawlins, NW NW SE Section 6-4s-8e, total depth 3,438 ft., set 7-in. casing at 3,130 ft. C. A. Evarts' No. 1 Brown, NW NW SW Section 35-4s-9e, shut down for orders at 2,562 ft. Phillips Petroleum Co.'s No. 1 Garner, NE NE NE Section 36-4s-10e, pipe twisted off at 2,666 ft. McIntyre & Johnson's No. 1 Hon, NE NW SE Section 9-4s-14w, shut down for orders at a total depth of 2,720 ft., plugged back from 2,727 ft. Continental Oil Co.'s No. 1 Hanna, SE SE NW Section 28-5s-10e, perforated pipe at 2,917-46 ft., Cypress sand, hole filled 1,600 ft. with salt water; squeezed and plugged back to test Biehl sand at 1,774-81 ft. Previously the well had been tested at 2,987-3,005 ft., recovering only salt water.

In Franklin County Phillips Petroleum Co.'s No. 1 Boyles, NE NW SE Section 19-5s-3e, shut down for orders at 3,073 ft.

In Hamilton County Alma Oil & Gas Co.'s No. 1 Federal Chemical, SE SW SE Section 9-7s-6e, drilling at 3,190 ft.

In Johnson County Tunnell Hill Oil Co.'s No. 1 Boner, C W½ SW NE Section 30-11s-3e, drilling at 3,285 ft.

In Pope County Gardenshire and Smith's No. 1 Peoples, C SE SE Section 19-11s-5e, set 8-in. casing at 1,220 ft.

In Massac County Marshall Drilling Co.'s No. 1 McGhee, NE NE NE Section 3-16s-5e, drilling at 1,520 ft. Kahle and others' No. 1 Harvick, SW cor. Section 23-14s-3e, was still shut down at 3,020 ft.

In Shelby County Rex Development Co.'s No. 1 Odell, C E½ SE NW Section 20-14n-2e, drilling at 1,550 ft.

In Greene County F. A. Johnson's No. 1 Owens, SW SE SE Section 16-11n-10w, top of Trenton lime at 1,260 ft.; shut down. Scroggin's No. 1 McVay, C SW NE Section 4-10n-11w, rigging up machine.

In Montgomery County Boren & Burroughs' No. 1 Jett, NW NE NW Section 30-8n-3w, shut down at 900 ft. W. N. Lee and others' No. 1 Sharp, NE SW SE Section 27-7n-4w, fishing for tools at 1,159 ft.

In Bond County R. F. Anderson and others' No. 1 Morris, NW NW NW Section 16-6n-3w, cleaning out at 1,200 ft. Devonian Oil & Gas Co.'s No. 1 Ambuehl, NE SW NW Section 22-6n-4w, total depth 1,894 ft., underreaming 6-in. casing.

In Fayette County Parrott & South's No. 1 Guffey, SE NW NE Section 1-5n-2e, shot with 10 qt. at 1,628-32 ft., filled up 500 ft. with fluid, cleaning out.

In St. Clair County Fishbein's No. 1 Kasner, PDCF-1n-10w, shot with 80 qt. at 504-34½ ft., testing water. W. Vogt's No. 2 Karr, in Prairie-Dupo field, Trenton pay at 528-60 ft., will shoot. L. A. Painter's No. 1 Petri, NW NW SE Section 28-2s-6w, shut down for orders at 1,030 ft. Oil Exploration Co.'s No. 1 Whickler, NW NW SE Section 34-2s-6w, drilling at 2,405 ft., Chattanooga lime at 1,952 ft.

In Clinton County Paul Mosebach's No. 1 Robinson, SE SW SE Section 5-1n-3w, drilling at 2,210 ft.

In Monroe County Davis & Brand's No. 1 Krause, C S½ NW SW Section 30-3s-7w, drilling at 210 ft.

In Washington County John Pugh's No. 1 Kroeger, NW NW SE Section 28-3s-1w, drilling at 1,625 ft., Fredonia lime topped at 1,558 ft. Ohio Oil Co.'s No. 1 Pinski, NE NE SW Section 23-3s-3w, location.

In Randolph County Ralston & Beattie's C NE SE Section 31-4s-5w, drilling at 600 ft. R. T. Pendergast's No. 1 Beattie, SW SW SW Section 11-5s-5w, fishing, total depth 582 ft.

In Perry County L. C. Simmel's No. 1 Kimsey, NE NE NW Section 13-5s-2w, drilling at 1,020 ft. E. S. Adkins' No. 1 Truax-Traer, SW NE SW Section 25-5s-2w, drilling at 1,560 ft., Rosecliare lime top at 1,501 ft. E. S. Adkins' No. 1 Old Ben Coal, SE SW NW Section 21-6s-2e, drilling at 2,675 ft.

In Jackson County M. C. Trumbull's No. 1 Bennett, C N½ NW NE Section 2-9s-5w, set 8-in. casing at 848 ft., drilling at 880 ft.

In Johnson County Coates and others' No. 1 Albright, NE NW SE Section 22-12s-2e, shut down for orders at 1,482 ft.; showing of dead oil in limestone at 1,225-40 ft.

In Brown County C. Measley and others' No. 1 Thomas, NE NE NW Section 15-1s-2w of fourth principal meridian, drilling at 295 ft. J. W. Fairbairn's No. 1 Newton, SW SW SE Section 33-2s-4w, shut down in Niagara lime at 415 ft.

In Fulton County J. H. Spiker's No. 1 fee, C N½ NE NE Section 3-7n-1e of fourth principal meridian, drilling at 565 ft.

In Peoria County Blue Bell Oil Co.'s No. 1 Kyle, NW SW NW Section 17-8n-6e of fourth principal meridian, drilling at 300 ft.

In Menard County William Johnson's No. 1 Johnson, SE NW NE Section 26-19n-5w, drilling at 1,482 ft.

(Continued on Page 88)

Eastern Field Report

By STAFF CORRESPONDENT

13 Fair-Sized Gassers Were Best of Week's New Wells

PITTSBURGH, Pa., Oct. 30.—Operations were purely routine in the lower eastern fields during the week. Completions consisted of a total of 23, which included 6 dry holes, 13 gas wells, and 4 oil producers with a daily initial of 26 bbl. There were some fair gas wells in both West Virginia and Southeast Ohio.

SOUTHEAST OHIO

In Licking County, Ohio, on Lot 24, Newton Township, C. A. Moore completed a test on the Ed Heller (Glover) farm in Clinton sand at 2,685 ft., good for 4,000,000 cu. ft. a day. In Section 24, Mary Ann Township, Ohio Fuel Gas Co. has a gas well on the William P. Devboise farm in Clinton sand, total depth 2,590 ft. It gaged 3,450,000 cu. ft. a day.

In Hocking County Preston Oil Co. completed No. 1696 Sunday Creek Coal Co., Section 11, Ward Township, in Clinton sand at 3,554 ft. It is good for 10 bbl. a day along with 213,000 cu. ft. of gas.

In Knox County C. A. Davis and others drilled a second test on the Virgil Bebout farm in Section 25, Clay Township, through the lime to 2,202 ft. and it was dry. The formation was topped at 1,585 ft.

In Madison Township, Licking County, C. R. Settles and others drilled a test on the Carrie Wickham farm in Section 8 through the Clinton sand to 2,696 ft., and it was dry.

In Monroe County H. B. Walker & Co. drilled a dry hole on the John W. Pittman farm in Section 27, Sunsbury Township, through the Keener sand to 1,681 ft.

In Noble County C. W. Rich and others completed a gas well on the Nannie and Dora Miller farm in Section 30, Seneca Township, in Berea grit at 1,486 ft. It gaged 90,000 cu. ft. a day. There was a very light showing of oil. In Section 32, Enoch Township, Merry & Skinner drilled a dry hole on the George Fogle farm through the Macksburg 500-ft. sand to a total depth of 729 ft.

SOUTHWEST PENNSYLVANIA

In Clarion County, Pennsylvania, Owens-Illinois Glass Co. completed a gas well on the John Shanefelt farm in Red Bank Township at 2,765 ft., with a final gage of 43,000 cu. ft. a day from the Hundred-foot and Speechley sands. This company was drilling at 1,120 ft. on the Lewis Keck farm, same township.

Armstrong County

No wells were completed in Armstrong County. In Cowanshannock Township Peoples Natural Gas Co. was drilling at 3,555 ft. on the Jacob Wagner farm; at 1,135 ft. in the William Small test, and at 830 ft. on the France Harkleroad farm. Equitable Gas Co. is down 3,100 ft. in the D. W. Raraigh test. Louden Drilling Co. was rigging up No. 1 A. G. Shaffer to be deepened. Apollo Gas Co. is hauling in material for the Hulda M. Bleakley test. T. W. Phillips Gas & Oil Co. is shut down at 303 ft. on the W. M. Harkleroad test, and made a location on the Jacob Boyer heirs farm.

In Boggs Township John Wray & Co. are drilling at 220 ft. in No. 3 William Mateer and at 1,050 ft. on the Malter Upperman farm. T. W. Phillips Gas & Oil Co. made a location on the McCullough heirs farm. In Kiskiminitas Township Appolo Gas Co. has a location for a second test on the A. D. Tressler farm.

In Kitanning Township Judson and others are drilling at 630 ft. in No. 2 W. J. Gray. In Manor Township John Wray & Co. made a location on the David Campbell heirs. In Plum Creek Township William McCollins is rigging up the Add Reefer test. In South Bend Township Shelocta Oil & Gas Co. is drilling at 454 ft. on the Harve Reefer land.

In Westmoreland County Dome Gas Co. deepened the test on the L. L. Weister farm in Bell Township to 4,000 ft., and it was dry. In Washington Township Peoples Natural Gas Co. is drilling at 3,620 ft. on the Asa Blose farm.

In Allegheny Township, Westmoreland County, Apollo Gas Co. has a location on the D. M. Jones farm.

Fayette-Greene

In Fayette County the Wahler-Powers Oil & Gas Co. completed a well on the S. H. Powers farm in Menallen Township at 2,264 ft., with Fifth sand at 2,232 ft., and 540,000 cu. ft. of gas a day at 2,237 ft. In this township J. H. Carnell is drilling at 1,470 ft. on the Mike Uhrin farm. New Penn Development Co. is down 1,964 ft. in the Schartzer farm test. In Nicholson Township Greensboro Gas Co. is drilling at 534 ft. on the Mary Oravis test.

In Greene County Northeastern Oil & Gas Co. deepened No. 3 N. S. Fetty in Franklin Township to 3,244 ft., Bayard sand, and it is good for 5 bbl. a day.

In Greene Township, Greene County, Fred Garrison is drilling at 1,085 ft. on the Henderson Coal Co. land. In Springhill Township James H. Null, agent, is shut down at 3,290 ft., with the tools in the hole in No. 5 David Null.

Washington County

In Bethlehem Township, Washington County, W. L. Potts and others completed a well on the Ken Kinnemond farm at 3,090 ft., with the Fifth sand at 2,814-34 ft.; gas gaging 150,000 cu. ft. a day at 2,814-16 ft.

In South Franklin Township Harry Williams & Co. have started drilling a second well on the John G. Clark farm. Foley & Williams are drilling No. 5 Jason Buchanan. A. V. Lewis and others have reached 1,565 ft. No. 13 J. Frank Wilson.

In Amwell Township Shivers and others shut down at 1,500 ft. on account of water in the T. J. Horn test. In Morris Township Brummage and others are drilling at 1,550 ft. in the J. Jones test. Union Gasoline & Oil Corp. is drilling at 300 ft. No. 824 H. A. Day and 1,587 ft. in No. 821 J. R. Andrews.

In South Fayette Township, Allegheny County, Cox & Gibson are drilling at 1,061 ft. on the William M. Patterson farm and Homer Nixon at 230 ft. on the James Hickman farm. In Jackson Township, Butler County, H. E. Etheridge is drilling at 1,400 ft. in the Lewis Stokey test.

Deep Tests

In Butler County South Penn Oil Co. deepened the test on the M. A. Fowler heirs in Concord Township to 5,549 ft., and abandoned it as dry. The Onondaga was topped at 5,341 ft., Oriskany 5,448 to 5,460 ft.

In Fayette County, on Chestnut Ridge, New Penn Development Co., William E. Snee, and others have drilled by the lost bailer at 6,120 ft. in the well on the Piedmont Coal Co. lease in North Union Township. Wasson & Co. were waiting for engine to start No. 2 J. H. Sorg, same township.

On Laurel Ridge in Stewart Township, Fayette County, New Penn Development Co., Snee, and Mueller are rigging on the Gregg L. Neel farm. In Maryland New Penn Development Co., Snee, and others are drilling at 2,450 ft. on the Humberson farm on the Accident dome in Garrett County.

WEST VIRGINIA

In Gilmer County Cain & Elliott completed a gas well on the O. F. Springston farm in DeKalb district at 1,875 ft. It was good for 75,000 cu. ft. of gas before shot at 1,850-75 ft. In this district Massey & Jarvis completed the second well on the Milton Jarvis farm at 1,423 ft., with Salt sand at 1,398-1,423 ft. and 232,000 cu. ft. of gas before the shot at 1,411-23 ft. In Troy district Mud Lick Oil & Gas Co. completed No. 3 J. W. Kelley at 1,955 ft., with 232,000 cu. ft. of gas at 1,951-38 ft.

In Lincoln County Hobbs Brothers deepened No. 1 Henry P. Lovejoy in Jefferson district from 2,240 ft. to 3,540 ft., Brown shale, and it gages 240,000 cu. ft. a day after the shot, with some gas in the Berea.

In Ritchie County West Virginia Investment Co. completed a 5-bbl. well on the Arthur Amick farm in Grant district at 1,902 ft., in Injun sand.

In Roane County F. W. Kennedy completed No. 2 B. F. Winters in Harper district at 1,540 ft., Salt sand, and it is good for 6 bbl. a day along with 500,000 cu. ft. of gas.

In Wayne County Southern West Virginia Gas Co. has a new gasser on the B. J. Prichard farm in Union district at 3,076 ft., with a final gage of 600,000 ft. a day after the shot. The rock pressure from the Big lime and Injun was 405 lb. and the Brown shale 410 lb.

In Wetzel County Hope Natural Gas Co. completed a fair gas well on the William Shafer farm in Proctor district in the Maxton sand at 1,938 ft. It gaged 4,000,000 cu. ft. a day.

Oriskany Gas Field

In Poca district, Kanawha County, Brawley-Reid Gas Co. completed a gas well on the A. L. Campbell farm at 5,072 ft., with the Oriskany topped at 5,018 ft. and a final gage of 4,664,000 cu. ft. a day.

In this district United Fuel Gas Co. deepened No. 4853 O'Dell to 4,972 ft., with a final gage of 3,558,000 cu. ft. a day. This company topped the Oriskany at 5,074 ft. on the D. C. Ingram farm, and at 5,101 ft. there was a showing of 1,196,000 cu. ft. a day. Same company is drilling at 1,795 ft. in No. 4859 C. H. Sisson and at 650 ft. in No. 4861 C. C. Fisher.

In Poca district Columbian Carbon Co. topped Oriskany at 5,074 ft. in the Tignor & Griffith test and at 5,110 ft. there was 178,000 cu. ft. of gas a day. On No. 1 H. H. Parsons this company topped the Oriskany at 5,018 ft. The company is drilling at 3,090 ft. in No. 2 H. H. Parsons; at 1,601 ft. in the John Price test; at 990 ft. in the B. H. Richards test; at 555 ft. on the Walter Payne land and was rigging up on the W. S. Jones land. United Carbon Co. is drilling at 2,750 ft. in the E. P. Higginbotham test. G. L. Cabot, Inc., spudded No. 3 Putnam Co.; Alpha Gas Co. was drilling at 1,610 ft. in No. 2 J. W. Legg; West Virginia Gas Corp. at 1,539 ft. on the P. B. Garnes farm. In Poca district Glenn Oil & Gas Co. topped the Oriskany at 5,293 ft. on the Laura Flowers farm, with 3,183,000 cu. ft. of gas showing at 5,316-37 ft.

In Elk district Columbian Carbon Co. is drilling at 5,019 ft. on the Tignor & Jordan farm, with Corniferous lime topped at 4,984 ft. In the Louden district this company is down 1,286 ft. in No. 4 Campbells Creek Coal Co. In Malden district United Fuel Gas Co. is drilling at 1,258 ft. on the Mattie J. Krantz farm.

Outside Deep Tests

In the Ravenswood district, Jackson County, Joe Rubin and others shot the test on the Gilbert Starr farm with 40 qt. at 4,708 ft., with a total depth of 4,741 ft. The shot did not show any gas and there was an absence of true sand.

In Washington district, Jackson County, United Carbon Co. is drilling in on the W. W. Riley and others lease after casing in the Corniferous lime at 4,981 ft. United Fuel Gas Co. is in the sand at 5,163 ft. in No. 4854 Sarah Jane Lanham farm, and testing; and is drilling at 1,872 ft. in No. 4860 Monroe Jones and others. Columbian Carbon Co. is drilling at 1,930 ft. in No. 1 Helen M. Hoge and at 682 ft. in No. 1 Putnam Co.

Kansas Developments

By
DAL DALRYMPLE

Outpost in Rice County May Open New Quartzite Oil Pool

Discovery of a pre-Cambrian quartzite pool in Rice County, Kansas, was indicated at Fred Jones, I. W. Murfin and others' No. 1 Behnke, SW NW Section 25-18-10w, 1 mile east of the Orth pool. After quartzite had been found at 3,202 ft. and penetrated to 3,206½ ft., where granite was topped, oil filled the hole and slopped over. No water was showing. Seven-inch casing was set at 3,199 ft. and operators were expected to test after drilling plug. Topeka and Lansing-lime zones also had showings of oil and gas, but conglomerate was barren. Arbuckle lime was missing.

A Tucker-sand pool was reported to have been uncovered in Crawford County, southeastern Kansas, at H. L. Salisbury and others' No. 1 Johnson, S½ SE Section 17-28-22, about 3 miles east of the town of Walnut. Sand was found at 513-47½ ft., was shot and pumped 35 bbl. of oil daily.

Lansing-lime production was uncovered at a small pumper in northern Barton County. It was Aylward Production Co. and others' No. 1 Harzman, C W½ NW SW Section 33-16-11w, 1¼ miles northwest of the Kraft pool. It was bottomed in Arbuckle lime at 3,350-56 ft., where a slight showing of oil was found. Casing was ripped at 3,124-32½ ft. in Lansing-lime series topped at 3,056 ft. and it swabbed at the rate of 2 bbl. of oil an hour, with a small amount of water. Tanks were being erected and it was to be put on pump.

New outposts reported the past week included Derby Oil Co.'s No. 1 Williams, C NW NE Section 14-21-8w, Rice County, ¾ mile south of the Lyons gas pool; H. B. Garden's No. 1 Misener, C N½ NW NE Section 21-21-7w, about 1½ miles northwest of the Wherry pool, Rice County; Allred's No. 1 Perringer, C NE NW Section 35-32-5, about 3 miles southeast of Frog Hollow pool, Cowley County, and Ward McGinnis and others' No. 1 Noone, Section 18-18-3e, some 4 miles north of the Hillsboro pool, Marion County.

Wildcat Operations

Continental Oil Co. and Earl Wakefield's No. 1 Berridge, NW NW SW Section 8-9-17, wildcat in Jefferson County, Kansas sector of the Forest City basin, was dry and abandoned at 2,981 ft., total depth. It entered Mississippi lime at 2,040 ft.; found salt water at 2,090-2,120 ft.; Kinderhook shale 2,342 ft.; set 6-in. pipe at 2,440 ft.; topped Hunton lime at 2,485 ft.; had a hole full of water at 2,515-20 ft.; had Wilcox sand at 2,865 ft. and Arbuckle lime at 2,940 ft.

Henderson & Keene's No. 2 Piper, NW NW SE Section 19-23-15, Woodson County wildcat, found dry sand at 1,460-70 ft. and was abandoned at total depth of 1,550 ft.

Henderson & Marcus' No. 1-A Smith, NW NW SE Section 8-24-11, wildcat in Greenwood County, topped Bartlesville sand at 1,768 ft. and was dry and abandoned at 1,862 ft.

Lawrence Spencer's No. 1 Edwards, NW NW SW Section 32-24-12, Greenwood County wildcat, had water showing and was abandoned at total depth of 1,903 ft. It drilled dry sand at 1,610-40 ft.

New wildcats included: Allred's No. 1 Peninger, C NE NW Section 35-32-5, Cowley County, drilling below 200 ft.; Ward McGinnis and others' No. 1 well, C SW NE Section 18-18-3e, Marion County, rig; Oko Oil Co.'s No. 1 Stephenson, SE SE NE Section 4-11-22, Leavenworth County, machine; O.K. Supply Co.'s No. 1 Gardner, SE SE NE Section 4-14-22, Johnson County, rigging up machine; H. B. Garden and others' No. 1 Misener, C N½ NW NE Section 21-21-7w, Rice County, rigging rotary.

Russell County

Texon Oil Co.'s No. 2 Hall, SW NW SE Section 26-14-13w, Hall pool, Russell County, drilled Lansing lime at 2,850-74 ft., total depth, was acidized with 6,000 gal., pumped 654 bbl. of oil in 8 hours and made daily potential of 1,963 bbl.

Estimated Daily Production

Estimated daily production for Kansas for the week ended October 28, and for the preceding week was as follows:

	Barrels	
	Oct. 28	Oct. 21
Oxford City	800	750
Burrton	10,900	10,600
Ritz-Canton	4,475	4,550
Graber	3,175	2,875
Hollow-Nikkel	2,175	2,000
Lerado	1,400	1,050
Voshell	1,650	1,775
Wellington	2,200	2,275
Ellsworth County:		
Lorraine	1,350	2,425
Other pools	1,715	1,960
Rice-Barton counties:		
Bloomer	3,600	3,050
Chase	4,850	4,200
Geneseo	3,400	4,450
Raymond	450	425
Silica	13,675	12,550
South Silica	2,450	2,500
Keesling	1,075	1,025
Wherry	4,000	4,350
Miscellaneous Rice	4,980	5,385
Miscellaneous Barton	10,010	8,950
Russell County	28,625	27,685
Sedgwick County	3,375	3,550
Ellis County:		
Bemis	5,675	6,825
Miscellaneous	5,735	3,870
Kingman County	780	730
Stafford County	8,310	6,320
Greenwood County	8,700	8,600
El Dorado	7,600	7,625
Other fields	40,070	32,500
Total Kansas	187,200	174,850

Darby Petroleum Corp.'s No. 14 Michaelis, S½ N½ SE Section 36-15-14w, Trapp field, found Arbuckle lime at 3,275-94 ft., total depth, oil rose 2,400 ft. in the hole in 8 hours and after treating with 4,000 and 2,000 gal. of acid, it was completed for potential of 3,011 bbl. of oil daily.

Shell Oil Co., Inc.'s No. 8 Dumler, C S½ N½ SW Section 36-15-14w, swabbed 183 bbl. of oil in 6 hours and made depthograph potential of 2,891 bbl. Arbuckle lime was found at 3,298-3,322 ft., total depth.

Cities Service Oil Co.'s No. 2 Hennessy, C S½ S½ SW Section 26-15-14w, penetrated Arbuckle lime at 3,350-70 ft., total depth, was acidized with 1,000 gal., pumped 208 bbl. of oil in 8 hours and made daily potential of 618 bbl.

Same company's No. 2-A Tittle, SW cor. Section 12-15-14w, pumped 125 bbl. of oil in 13 hours, was estimated good for 200 bbl. of oil daily and completed in Arbuckle lime at 3,342-46 ft., total depth.

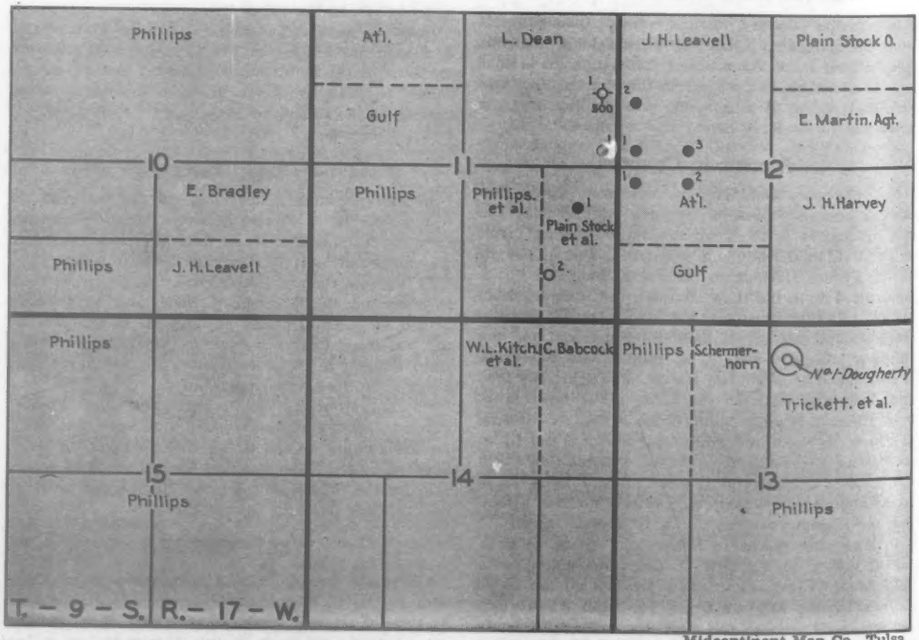
Shell Oil Co., Inc.'s No. 1 Sellens, SW cor. Section 33-15-13w, was moving in material. Cities Service Oil Co.'s No. 5-D Tittle, NE cor. Section 14-15-14w, was moving in material. Liggett and others were drilling deeper at No. 2 Durham B, an old well in Section 20-11-15w. Other new Russell County tests included Earl Wakefield's No. 1 Millberger, NW¼ Section 7-14-14w; Stanolind Oil & Gas Co.'s No. 3 Boxberger, SW¼ Section 14-14-14w, and W. I. Southern, Inc.'s No. 7 Neidens, NW NE NE Section 32-15-13w.

Ellis County

Darby Petroleum Corp.'s No. 4 Henderson, C N½ SE NW Section 7-11-17w, South Burnett pool, Ellis County, was acidized with 1,500 gal. and completed for depthograph potential of 10,235 bbl. of oil daily. It found Arbuckle lime at 3,448-55 ft., total depth, and oil rose 2,800 ft. in the hole.

Phillips Petroleum Co.'s No. 4 Hendrick, C N½ SE NE Section 13-11-18w, found Arbuckle lime at 3,357-60 ft, total depth, swabbed 189 bbl. of oil in 3½ hours and made echometer potential of 12,583 bbl. of oil daily.

Shell Oil Co., Inc.'s No. 25 Rumsey, SE SE NE Section 23-11-17w, Bemis field, topped Arbuckle lime at 3,421 ft., was bottomed at 3,431 ft., and swabbed 286 bbl.



Midcontinent Map Co., Tulsa

Southeast extension of the Westhusin area, Rooks County, is sought at Trickett and others' No. 1 Dougherty, C W½ NE NW Section 13-9-17w. Plainstock Oil Co.'s No. 2 Westhusin, CWL SE Section 11-9-17w, had oil in the hole from Lansing lime and may extend production southward

of oil in 4 hours. It was completed for maximum allowable potential of 3,500 bbl. of oil daily, and had depthograph-potential rating of 74,148 bbl. of oil.

In Rooks County, Bay Petroleum Co.'s No. 1 Hahn, SW SW SE Section 31-10-17w, was moving in material. Republic Natural Gas Co.'s No. 2 Riddle, C W½ SW SW Section 31-10-17w, was moving in material.

McPherson County

Continental Oil Co. and others' No. 2 Mattson, C E½ E½ NW Section 31-20-5w, Bornholdt pool, McPherson County, found Mississippi-lime pay at 3,317-40 ft., total depth, flowed 473 bbl. of oil in 8 hours and made 24-hour potential of 1,419 bbl.

Same operators' No. 3 Mattson, C N½ NE NW Section 31-20-5w, flowed 603 bbl. of oil in 8 hours and made daily potential of 1,810 bbl. It found pay in Mississippi lime at 3,297-3,335 ft., total depth.

H. & M. Drilling Co.'s No. 3-A Lagree, SW SW NW Section 31-19-1w, Ritz-Canton area, was dry and abandoned at total depth of 3,398 ft. in Viola lime.

Continental Oil Co. and others' No. 11 Goering, NW NW SW Section 29-21-1w, was building rotary rig. Fain Drilling Co. and others' No. 1 Briggs, NW SW NW Section 29-20-5w, also was building rotary rig.

Barton County

Stanolind Oil & Gas Co.'s No. 10 Stueckemann, NW NW SW Section 11-20-11w, Barton County sector of the Silica field, was completed for daily potential rating of 5,473 bbl. of oil. It found Arbuckle lime at 3,267-72 ft., total depth, and pumped 38 bbl. of oil the first hour and 41 bbl. the second hour of initial test.

Magnolia Petroleum Co.'s No. 7 Mueller, SW NE NE Section 1-18-11w, Bloomer pool, found Lansing lime at 2,989-94 ft., was bottomed at 3,000 ft., pumped 112 bbl. of oil in 8 hours and made potential of 338 bbl. daily.

Shell Oil Co., Inc.'s No. 6-B Bitter, SW NW SW Section 5-16-13w, South Trapp area, drilled Arbuckle lime at 3,347-54 ft., total depth, swabbed 228 bbl. of oil in 4 hours and made depthograph potential of 3,869 bbl.

New operations in Barton County included Shell Oil Co., Inc.'s No. 1 Herthel, Section 15-17-11w, and Frank Hollow and others' No. 1 Schartz, NW¼ Section 18-20-11w, an old well being deepened.

Rice County

Westgate-Greenland Oil Co.'s No. 1 Malm, C N½ NE NW Section 25-20-6, Hodge-Bornholdt area, Rice County, topped Mississippi lime at 3,280 ft., was bottomed at 3,363 ft., pumped 5 bbl. of oil and 5 bbl. of water daily, and was abandoned.

New operations recently reported in Rice County included: Midwest Petroleum Co. of Colorado's No. 1-A Burch, Section 21-18-9w, location; Continental Oil Co.'s No. 6 Meyer, SW Section 30-18-7w, rig; Jock Garden's No. 1 Browning, Section 7-19-9w, rig; McPherson Drilling Co.'s No. 1 Cramm B, Section 10-19-9w, drilling; Phil-Han Oil Co.'s No. 1 Ettie and same operator's No. 1 Weiland, Section 5-20-9w, locations; Gulf Oil Corp.'s No. 1 Drake, SW¼ Section 31-20-7w, rig.

Ellsworth County

Spencer & Yarnell's No. 4 Gemeinhardt, C N½ S½ SW Section 31-17-10w, Bloomer field, Ellsworth County, found Arbuckle lime at 3,229-34 ft., total depth, pumped 102 bbl. of oil in 8 hours, was acidized and completed for echometer potential of 7,068 bbl. daily.

Stafford County

Stanolind Oil & Gas Co.'s No. 3 Sims, C S½ SE NE Section 11-24-11w, Zenith field, Stafford County, had Misener sand at 3,730-42 ft., total depth 3,744 ft., flowed 76 bbl. of oil in 3 hours and made bomb potential of 586 bbl.

Same company's No. 4 McComb, N½ NW SW Section 12-24-11w, flowed 75 bbl. of oil in 8 hours and made bomb potential of 359 bbl., producing from Misener sand at 3,730-53 ft., total depth 3,754 ft.

Stanolind Oil & Gas Co.'s No. 6 Fuller, N½ N½ SW Section 11-24-11w, found Misener sand at 3,732-41 ft., total depth, was acidized with 2,000 gal., flowed 23 bbl. of oil in 1 hour and made bomb potential of 340 bbl.

E. H. Moore, Inc.'s No. 5 Stewart, SW¼ Section 12-24-11w, was a rig; Stanolind Oil & Gas Co.'s No. 4 Harbeson, Section 11-24-11w, was a rig; same company's No. 6 Siefkes, Section 3-22-12w, location.

Pratt County

Skelly Oil Co.'s No. 3 Moore, C SW¼ Section 25-27-11w, biggest gas producer in the Cunningham field, Pratt County, was officially completed for 109,177,000 cu. ft. of gas daily, as previously announced. Shut-in casing pressure was 1,300 lb. It gaged 19,707,000 cu. ft. of gas before acid treatment. Production was from Viola lime at 4,048-66 ft., total depth.

Barber County

Barbara Oil Co.'s No. 2-B Thompson, C NE¼ Section 16-33-13w, Medicine Lodge field, Barber County, found gas pay in Mississippi lime at 4,605-74 ft., total depth 4,788 ft. It was shot in pay and had initial production of 16,000,000 cu. ft. of gas daily.

Same company's No. 4-B Root, C NW¼ Section 15-33-13w, was a cellar.

Cowley County

Ben Gralapp's No. 1 Ellinger, C NE NE Section 27-32-5, Frog Hollow pool, Cowley County, found sand at 640-58 ft., was bottomed at 660 ft., and produced 500,000 cu. ft. of gas daily, with 220 lb. rock pressure.

Same operator's No. 2 Ellinger, C NW NE Section 27-32-5, also was completed for 600,000 cu. ft. of gas daily from sand at 638-44 ft., total depth 650 ft.

Texas Co.'s No. 10 Hittle, SE NW SE Section 21-31-4, was rigging up rotary. Arthur Brewer's No. 6 Lewis, SW SE NE Section 28-31-4, was building rig.

Greenwood County

Oko Oil Co.'s No. 18 Shadel, SW NW SE Section 15-23-13, Vergil area, Greenwood County, found Mississippi lime at 1,794-1,802 ft., total depth 1,825 ft., and pumped 10 bbl. of oil daily.

Duncan Oil Co.'s No. 3 Souden, C W½ W½ NW Section 20-23-13, was rigging up.

Butler County

Rex & Morris and others' No. 4 Hutton, SE SW SW Section 14-28-7, Brandt area, Butler County, was estimated good for 35 bbl. of oil daily after acidizing Mississippi lime found at 2,670-2,702 ft., total depth 2,711 ft.

Adair & Morton's No. 1 Lychlyter, C N½ NW SW Section 6-29-4, Douglas area, topped Arbuckle lime at 2,910 ft., had a hole full of water and was abandoned at 2,915 ft., total depth.

Henderson Oil Co.'s No. 1-A Wilson, SE NE SE Section 7-25-5, Eldorado field, found Viola lime at 2,441-51 ft., total depth, and was completed for an estimated 15 bbl. of oil and 15 bbl. of water daily.

Glass & Reed's No. 14 Millheiser, SE NW NE Section 4-26-5, had pay at 2,601-15 ft., total depth, was acidized and estimated good for 25 bbl. of oil daily, completed.

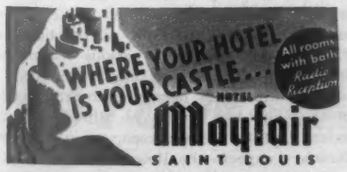
Adair & Morton's No. 8 Brandt, SE SE SE Section 15-28-7, Brandt pool, was completed recently at 2,701 ft., total depth, for 35 bbl. of oil daily.

Allbe Oil Co.'s No. 56-B Porter, SE NE NW Section 1-26-4, new test in Butler County, was drilling below 200 ft.

Forest City Basin Activity

ST. JOSEPH, Mo., Oct. 30.—Rentals are being paid on many leases in the Forest City basin, refuting predictions of some pessimists that few leases would be renewed. Several of the big companies began paying rentals and clearing titles a few months ago, and within the last 3 weeks small companies and individual operators have been paying their first annual rentals. It is estimated that rentals will be paid on at least one-third of the 3,000,000 or more acres in Missouri that were leased last year. It is predicted that 75 per cent of the 400,000 to 500,000 acres leased in northeastern Kansas would be held by payment of rentals; and that rentals will be paid on at least one-half of the 600,000 to 750,000 acres leased in the Iowa-Nebraska sectors of the basin. Rentals average about 23 cents an acre, ranging from 10 cents to 50 cents.

Operators were preparing to start several new tests in the Missouri sector of the basin. Vincent & Roach's No. 1 Dillingham, in Section 16-53-34, Platte County,



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was due to start work right away. Location is on an Indian Territory Illuminating Oil Co. block.

Machinery was being moved to two locations in Adair County—Ward McGinnis' No. 1 Laughlin, SE SE SW Section 18-62-15w, and Eddington-McAlpin's No. 1 Johnson, Section 31-64-17w.

E. F. Neely and others' No. 1 Shores, SE SE SE Section 12-60-37w, Andrew County wildcat, was spudded with portable rotary rig and was drilling ahead below 200 ft. Crow Drilling Co. has the contract. Location is on a Derby Oil Co. block.

H. H. Francis and others' No. 1 Lewis, SW NW SW Section 28-59-27w, Daviess County test, was reported to have had a showing of oil at 800 ft. and was drilling ahead.

In Iowa, F. E. Hunt and associates have repaired rig and resumed drilling at No. 1 McConnell, C SE SE Section 11-78-30w, Guthrie County. The crew was drilling below 65 ft.

Pawnee Royalty Co.'s No. 1 Boice, C NE NE Section 18-1n-6, wildcat in the Richardson County, Nebraska, sector of the basin, was reported drilling below 2,400 ft., but official information was not given out.

Illinois Fields

(Continued from Page 84)

In Ford County Nelson, Brown, and Erp's No. 1 Stroh, NE SE NW Section 19-24n-7e, drilling at 1,275 ft.

WESTERN KENTUCKY

OWENSBORO, Ky., Oct. 30. — Eighteen new operations were started in western Kentucky in the past week, while only nine wells were completed, including three small oil wells, one gas well and five dry holes. Following is the record for the week:

Breckinridge County, Glen Dean district, Jack Cooper's No. 8 Earl Moorman, 10-bbl. well in Barlow sand, total depth 235 ft.

Butler County, Silver City district, Billy Phillips' No. 4 Martha Hawes, drilling at 200 ft. Cumberland Petroleum Co. and others' No. 3 Lee Hawkins, moving in.

Daviess County, Cane Run School district, Ellis and Huff's No. 1 R. Ambrose, old well drilling deeper at 1,227 ft. Glenville district, A. Teller, trustee's No. 1 George P. Baird, drilling at 100 ft. Utica district, J. C. Ellis' No. 2 J. C. Ellis, drilling deeper from Jett sand at 1,155 ft. to McClosky, drilling at 1,540 ft. C. E. Daugherty's No. 5 C. W. Howard, drilling deeper from Jett sand at 1,069 ft. to Jones sand. C. E. Daugherty's No. 8 Rex O'Flynn, rigging up. Handyville district, J. C. Miller, trustee, and others, No. 1 John Howard, moving in. Pellville district, Trennan Oil Co.'s No. 8 J. H. Myles, rigging up.

Hancock County, Easton district, W. E. Hupp and others' No. 18 E. G. Bannon, 200,000 cu. ft. of gas from Big lime, total depth 519 ft. Koontz and others' No. 4 H. H. Hendrick, dry hole through McClosky lime, total depth 704 ft. Sanders School district, Glenn Chancellor's No. 1 H. Bivens, drilling deeper from 685 ft., drilling at 900 ft. Patesville district, Koontz and others' No. 3 Cicero Boling, spudding in. Cloverport district, Lincoln Petroleum Co.'s No. 4 Margaret McGavock, dry hole, total depth 540 ft. Island district, South Penn Oil Co.'s No. 10 Alma Nail, rigging up. South Livermore district, J. C. Ellis and others' No. 3 Stevens heirs, drilling at 62 ft.

Ohio County, Sunnydale district, Tuttle and others' No. 3 Lena Berry, drilling at 110 ft. Roy Taylor and others' No. 2 Charles E. Wimsatt, 24 bbl. from Pennsylvanian, total depth 175 ft. Dundee district, Dundee Valley Gas & Oil Corp.'s No. 7 A. P. Boswell, 5-bbl. well in Jett sand, total depth 800 ft. Davidson Station district, Mecca Oil Co.'s No. 1 Sadie Fentress, moving in. Ken State Oil Co.'s No. 6 T. P. Fentress, location. Buford district, T. M. Galey's No. 1 O. L. Kirk, dry hole through McClosky lime, total depth 702 ft. Maxwell district, T. M. Galey and others' No. 6 J. W. Smith heirs, drilling at 350 ft.

Union County, St. Vincent Academy district, Basin Drilling Co. and others' No. 1 George and Frank Greenwell, dry hole, total depth 2,675 ft.

Webster County, Sebree district, Oliver Petroleum Co.'s No. 1 E. C. Lyles, dry hole, total depth 2,675 ft.

CENTRAL OHIO

NEWARK, Ohio, Oct. 30.—A 65-bbl. oil well on the present northern limit of the Newark gas pool is the feature of the Central Ohio fields. Noble County yielded the only gas well with an open flow of better than 1,000,000 cu. ft. A sub-Trenton test in northwestern Ohio is being abandoned. Central Ohio completions are as follows:

Athens County, Bern Township, E. N. Williams' No. 1 Harry Aldridge, Section 16, is a gas well gaging 500,000 cu. ft. per day on open flow from Salt sand at 876-93 ft. Lodi Township, C. J. Ross and others' No. 2 Wayne Wingett, Section 13, makes 2 bbl. of oil naturally from first Cow Run sand at 425 ft.

Hocking County, Ward Township, Preston Oil Co.'s No. 172 Sunday Creek Coal Co., Section 11, flowed 10 bbl. of oil the first 24 hours after shot; Clinton pay 3,515-44 ft.

Holmes County, the Clinton test drilled by the Kemrow Co. in Knox Township, Section 28, on the N. R. Bean tract, had a light showing of oil at 3,110-20 ft. and was abandoned at 3,051 ft. Mechanics Township, Bell Brothers' No. 2 Katie Herb, Section 13, is a 100,000-cu. ft. gas well in the Berea at 760 ft.

Licking County, Mary Ann Township, Preston Oil Co.'s No. 2 Florence Hoover, Section 25, was swabbed for 65 bbl. of oil the first 24 hours after a shot in Clinton sand at 2,530-35 ft. Shuff-Davis Co.'s No. 1 Czar Fisk, Lot 25, showed only 12,000 cu. ft. of gas in the Clinton and was abandoned at 2,716 ft. Madison Township, H. L. Rexroth and others' No. 2 Sam Walpole is a 3-bbl. pumper from the Berea at 780 ft.

Noble County, Beaver Township, Yoker Valley Gas Co.'s No. 2 H. G. Long, Section 33, gaged 1,200,000 cu. ft. of gas from Berea sand at 1,396-1,406 ft. Barnesville Development Co.'s No. 1 N. B. Grimes, Section 2, is a small Berea sand gas well at 1,896 ft.

Monroe County, Franklin Township, George Robinson's No. 1 John Zwick, Section 22, makes 135,000 cu. ft. of gas open flow in the grit at 1,761 ft.

Muskingum County, Brush Creek Township, Gas Producing Co.'s No. 1 Alfred Mautz, Section 24, is a gas well gaging 970,000 cu. ft., open flow, from Clinton sand at 3,959 ft.

Washington County, Fairfield Township, R. W. Porter's No. 1 P. A. Lynch, Section 2, Maxon sand, was dry and abandoned at 1,313 ft.

Lima Field

Further deepening of the sub-Trenton test in Harrison Township, Henry County, will not be attempted. McAfee and others have removed the rig from the Lucy Damon test in Section 24. The hole had been carried 175 ft. under the Trenton to a depth of 2,513 ft. No commercial showings were found.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ont., Oct. 30. — Pipe-line runs from the Turner Valley field to Calgary in September totaled 658,399 bbl., compared with 721,881 bbl. in August and 769,574 bbl. in September 1938. For the 9 months of 1939 deliveries totaled 5,165,483 bbl. against 4,560,210 bbl. in the same period last year. Of the September deliveries, 161,637 bbl. were taken by British American Oil Co.

In Section 6-19-2w5, West Central Turner Valley, East Crest Oil Co.'s No. 4, LSD 8, finished in the Madison at 8,040 ft., produced 500 bbl. in 9 hours with booster gas, after an extensive process of cleaning and acidizing. Owing to inability to secure a steady gas supply the company will install compressor, and expects daily production around 350 bbl. The previous production was about 115 bbl. a day.

In Section 32-18-2w5 Royalite Oil Co.'s No. 42, LSD 4, finished in the black lime at 8,491 ft., is acidizing and testing production, with indications of a good well.

In Section 29-18-2w5 Royal Canadian Oil Co.'s No. 3, LSD 12, is being finished at 8,656 ft., only 277 ft. in the lime. Flow through 1-in. choke showed 1,611 bbl. a day on tests of the upper porous zone, and allowable was set at 678 bbl. Pressure in the casing was 1,625 lb. Royal Canadian's No. 3 is slightly lower on structure than Anglo-Canadian's No. 5, the most westerly crude producer, and 452 ft. higher than Scottish Petroleum's No. 1 which encountered salt water in the lower porous zone of the lime. Because of the good results in the upper zone and the risk of water in the lower horizon it was decided not to drill deeper. The well is the largest producer from the upper horizon, and the allowable is the third largest in the field.

Key Wells Are Finished

In Section 25-19-3w5, West Central Turner Valley, Argus Royalties' No. 1, LSD 11, was finished at 7,384 ft., 475 ft. in the Madison. Tubing was run and the well acidized. The well was being brought in by swabbing, as high-pressure gas was not readily obtainable so far from the proven field; but early indications were for a good producer.

Farther south on the west flank Anglo-Canadian Oil Co.'s No. 8, LSD 11, Section 7-19-2w5, was finished at 7,788 ft., some 472 ft. in the Madison. Tubing was run and the well allowed to clear itself, after which it was acidized. The previous drill-stem test of the upper porous zone showed good production, and a large well is anticipated.

These two completions, north of the proven area of West Central Turner Valley and west of the old gas-naphtha area, not merely extend the proven field but tend to confirm the belief that a continuous producing area will be found from the west-flank producers in South Turner Valley to Home Oil Co.'s No. 2 Millarville in North Turner Valley. Anglo-Canadian's No. 8 lies 1½ miles northwest of Vulcan-Brown Petroleums' No. 1, one of the largest wells in the West Central area. Argus Royalties' No. 1 lies 3½ miles north and slightly west of Anglo-Canadian's No. 8, and 7¼ miles south and slightly east of Home Oil Co.'s No. 2 Millarville, the largest well in the field. From the latter to D. & D. Oils' No. 1, the southernmost crude producer, the distance is 17½ miles. With the Argus well a producer, operators regard the entire length of 17½ miles as proven territory. While the producing area is definitely determined to the south, the structure is believed by Dr. G. S. Hume, of the Geological Survey of Canada, to extend another 7 miles northwest of Home's No. 2, making the potential field 24½ miles long, with a width varying from 1 to 2 miles.

West Side Drilling

In Section 29-18-2w5 Commoil's No. 3, LSD 13, is digging cellar, close to the location of the abandoned P. & H.-Alco's No. 1. Commonwealth Drilling Co. will handle the contract, and probably will wait for the rotary outfit from Command Oils' No. 2, LSD 11.

In Section 17-18-2w5 Extension Royalties' No. 3, LSD 13, is working on cellar.

In North Turner Valley Royalite Oil Co.'s No. 47, LSD 15, is working on derrick. In Section 27-20-3w5 Royalite's No. 48, LSD 12, is starting preliminary work on location.

In the Whiskey Creek area Mar Jon Oil Co.'s No. 5, LSD 1, Section 5-22-4w5, is below 1,885 ft. and believed getting close to the bottom of the upper Cretaceous formations. Possible producing horizons are the Blairmore, within a few hundred feet, and the Madison limestone, both of which are expected with much shallower drilling than in the Turner Valley crude area.

Home Oil Co. has increased its holdings on the Brazeau structure in the northern foothills by 14,840 acres to a total of 78,333 acres. Its Brazeau test is down to 6,660 ft. Gas struck at 6,645 and 6,660 ft. showed sufficient pressure to blow the tools up the hole, in each case causing a serious fishing job. Sequence of markers in the last 200 ft. has been normal, indicating a relatively low angle of dip of formations. J. O. G. Sanderson, consulting geologist, expects the limestone contact at above

8,000 ft. unless further structural complications are encountered.

On the Pouce Coupe structure in the northern foothills Benedum & Trees' No. 1 Guardian, Section 7-80-12w6, is at 5,500 ft., some 700 ft. in the lime, and preparing to acidize and test production. Shows of oil and gas have been met in the lime.

Border Fields

In the Keho Lake area Keho Dome Oils is preparing for No. 1 test in LSD 3, Section 18-11-22w4. The Madison limestone is the main objective, though a deep test drilled some years ago by the Hudson's Bay Oil & Gas Co. got a small commercial production of light oil in a stray sand of the overlying Benton formation.

Lloydminster-Vermilion

Extensive development work is in progress in a large area of East Central Alberta and West Central Saskatchewan. The more easterly development centers in Lloydminster, a town of 1,800 on the Alberta-Saskatchewan boundary, about 186 miles east of Edmonton. Another center of activity is Vermilion, population 1,500, some 45 miles farther west. About 60 miles due south of Vermilion lie the Wainwright and Ribstone fields, which for a number of years have been producing small quantities of heavy crude, and farther west, between Wainwright and Edmonton, are the Fabyan, Kinsella, and Viking gas fields, the latter supplying gas to Edmonton and communities contiguous to the Northeastern Utilities main transmission line.

Prospecting for oil and gas in these plains areas has been difficult owing to absence of rock exposures. Production is, however, found between 1,400 and 2,200 ft., the deepest wells, with modern equipment, costing around $20,000 or less, as against $125,000 to $150,000 in Turner Valley. The first use of rotary equipment in Canada was in the Wainwright field.

Operations, previously carried on by small local companies, were largely consolidated when control of producing wells in the Lloydminster-Vermilion area on leases covering approximately 53,000 acres was acquired by Franco Oils, Ltd., headed by Walter F. Thorn of Moose Jaw, Sask., as a preliminary to an extensive natural-gas project. Associated with Mr. Thorn as president and general manager of a gas-distributing subsidiary, the Northern Natural Gas Co., is John K. Swanson, for 10 years vice president and general manager of Minneapolis Gas Light Co. and formerly an official of Commonwealth Southern Gas Co. Through this subsidiary the Franco company plans to supply gas to Saskatoon, a city of 45,000. The project involves construction of a 162-mile transmission line at an estimated cost, with feeders, of around $4,000,000. Application for a franchise for Saskatoon, already approved by the municipality, is now being considered by the Saskatchewan local government board. The intervening communities include North Battleford (population 6,300), Radisson, and Langham, with Unity, Biggar, Wilkie, and other towns farther south. The sponsors of the project contemplate the ultimate extension of the system to serve the cities of Moose Jaw and Regina, in southern Saskatchewan, and possibly to Winnipeg, in Manitoba. Operations of the Thorn interests in leasing and drilling, as well as the projected Saskatoon pipe line, it is reported, are being financed by New York, Chicago, and Minneapolis interests.

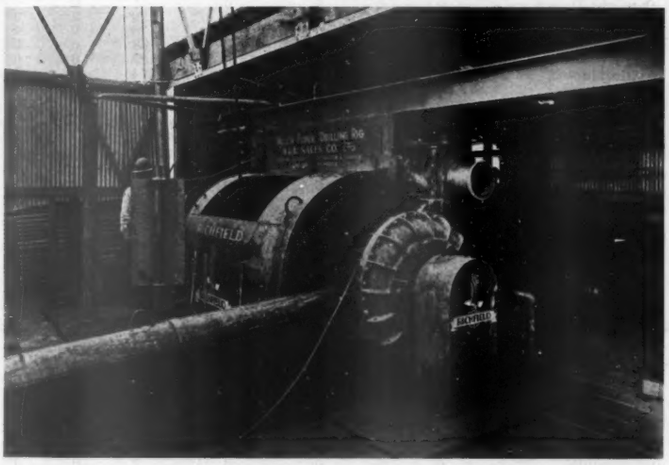
It is estimated that the Franco interests now control a daily gas flow of 116,000,000 cu. ft. after 20 per cent withdrawal, from seven wells in the Lloydminster field and one in the Vermilion area; which is believed an ample reserve for the Saskatoon project. They have also a potential production of between 700 and 800 bbl. of heavy crude from four Lloydminster wells and one in the Vermilion area. Drilling, so far, has been largely wildcatting, with tests far apart in a wide area. With the shallow drilling additional wells can be put down rapidly in what is practically proven territory.

In the Lloydminster field Franco Oils controls wholly or in part the output of Colony Oil & Gas Co., Northern Utilities, Triangle Gas & Oil Co., Dina Oil & Refining Co., Lloydminster Gas Co., Lloydminster Royalties, and Shaw Petroleums. Lloydminster Gas Co., the pioneer venture, now holds leases on 2,200 acres.

Colony Oil & Gas Co.'s No. 1, some 2½ miles east of Lloydminster, got gas at 1,700 ft. with flow of 39,200,000 cu. ft. a day and 430 lb. rock pressure. Colony's No. 2, a mile farther south, got 11,400,000 cu. ft. a day at 1,695 ft., with 430 lb. pressure. The company holds 5,000 acres and supplies part of the gas for Lloydminster. Northern Utilities Co., a subsidiary of Lloydminster Gas Co., drilled its No. 1 a quarter of a mile north of Colony's No. 2, and now furnishes the major gas supply for the town. Triangle Gas & Oil Co. of Regina drilled its No. 1 a half mile south of Lloydminster, developing 1,000,000 cu. ft. a day with 430 lb. pressure at 1,700 ft. Dina Oil & Refining Co., a local enterprise, has been active in the eastern end of the Ribstone field. Lloydminster Royalties, financed jointly by Franco Oils and R. I. Shaw, holds 1,920 acres.

In the Vermilion area, 45 miles west of Lloydminster, and about 141 miles east of Edmonton, operations have been carried on by Wain Town Gas & Oil Co. and Battleview Oils. Franco-Battleview's No. 1, drilled by Battleview Oils about 24 miles southeast of Vermilion, was brought in about 2 years ago as one of the largest gassers in Alberta, production at 1,894 ft. being estimated 38,000,000 cut ft. a day with 600 lb. pressure.

Franco Oils also holds 21,000 acres in



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the Unity-Vera area, 60 miles southeast of Lloydminster, where gas was struck at 1,610 ft., estimated 300,000 cu. ft. a day, and heavy crude at 2,070 ft.

British Dominion Oil & Development Corp. of Calgary has acquired acreage in both the Lloydminster and Vermilion fields, and making location and letting contract for a test.

Toronto interests are arranging for systematic drilling on acreage recently secured on Maintoulin Island in Georgian Bay. The Toronto syndicate has secured leases on 20,000 acres about 16 miles due south of the Manitowaning wells, where it is believed the producing horizon of the Trenton lime will be tapped at about 1,100 ft. Operators claim the field is somewhat similar to the Marietta field in Ohio.

California Oil Field Operations For August, 1939

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for August amounted to 18,934,353 bbl., an average of 610,786 bbl. per day. This is an increase of 4,233 bbl. per day over July production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 2,262,686 bbl. The total stocks at the end of the month were 156,583,782 bbl. The total stock decrease for 1939, up to August 31, was 1,100,507 bbl.

Eighty-one wells were completed during the month with an initial daily production of 84,906 bbl., compared with 79 wells completed during July, with an initial production of 71,168 bbl.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gal.)

	Total production	Daily average		
Group No. 1—	August	Aug. 1939	July 1939	Aug. 1938
Arvin	53,735	1,733	1,366	
Belridge—North	378,201	12,200	11,842	11,919
Belridge—South	38,435	1,240	1,134	1,070
Canal	177,953	5,729	5,521	2,800
Canfield Ranch	2,788	90	102	93
Coalinga	628,797	20,284	19,143	9,878
Cole's Levee	37,011	1,194	834	
Edison	68,428	2,207	2,267	2,649
Elk Hills	323,860	10,447	10,680	10,530
Fruitvale	192,302	6,203	6,185	7,806
Greeley	70,520	2,275	2,267	2,994
Kern River	364,684	11,764	11,375	11,431
Kettleman Middle dome	797	26	28	44
Kettleman North dome	1,618,791	52,219	52,386	64,729
Lost Hills	105,726	3,411	3,285	3,390
McKittrick	117,589	3,793	3,657	3,313
Midway-Sunset	1,541,442	49,724	50,326	58,647
Mountain View	251,130	8,101	8,177	9,547
Mount Poso	330,890	10,674	11,106	15,108
Paloma	262	8		
Rio Bravo	242,868	7,835	7,801	8,058
Round Mountain	265,639	8,569	8,365	13,807
Strand	10,551	340	248	
Ten Section	291,338	9,398	9,190	7,543
Tupman	15,468	499	482	
Wasco	42,005	1,355	1,218	399
Wheeler Ridge	10,004	323	323	310
Group No. 2—				
Capitan	72,515	2,339	2,328	2,698
Elwood	128,813	4,155	4,095	5,472
Rincon	81,541	2,630	2,514	3,669
San Miguelito	86,153	2,779	2,522	2,350
Santa Barbara	8,311	268	321	443
Santa Maria	505,751	16,315	20,335	20,668
Summerland	827	27	32	26
Ventura Avenue	1,102,950	35,579	36,703	34,487
Ventura-Newhall	218,050	7,034	6,445	5,446
Watsonville	930	30	30	30
Group No. 3—				
Brea-Olinda	177,576	5,725	5,697	5,642
Coyote—East	82,612	2,665	2,573	3,348
Coyote—West	283,125	9,133	10,014	8,227
Domingues	553,888	17,868	17,592	25,420
El Segundo	92,384	2,980	2,983	7,902
Huntington Beach	789,728	25,475	25,271	31,841
Inglewood	389,530	12,566	12,758	14,130
Lawndale	1,387	45	47	80
Long Beach	1,401,651	45,215	45,146	56,933
Los Angeles-Salt Lake	17,713	572	499	438
Montebello	723,853	23,350	18,609	11,822
Playa Del Rey	146,385	4,722	4,964	5,875
Potrero	38,550	1,244	1,100	692
Richfield	271,266	8,751	8,800	9,000
Rosecrans	329,447	10,627	10,759	13,569
Santa Fe Springs	844,376	27,238	27,402	32,709
Seal Beach	220,560	7,115	6,898	8,419
Torrance	493,915	15,933	16,788	17,199
Whittier	28,886	932	950	937
Wilmington	2,660,826	85,833	83,070	94,458
Total August	18,934,353	610,786	606,553	669,995
Total July	18,803,140	606,553		
Increase	131,213	4,233		

OIL FIELD DEVELOPMENT

	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Group No. 1—							
Arvin	1	1	3	6,061	10	1	0
Belridge—North	1	3	2	1,045	72	0	0
Belridge—South	0	0	0	0	87	0	0
Canal	1	2	1	1,464	26	0	0
Canfield Ranch	0	0	0	0	1	0	0
Coalinga	6	14	5	10,418	878	2	0
Cole's Levee	6	8	2	1,650	8	0	0
Edison	0	2	0	0	88	0	0
Elk Hills	0	0	0	0	169	0	0
Fruitvale	1	2	2	189	174	2	0
Greeley	0	2	2	7,048	21	0	0
Kern River	5	5	3	17	1,482	0	0
Kettleman Middle dome	0	0	0	0	3	1	0
Kettleman North dome	4	11	5	10,603	229	0	1
Lost Hills	0	0	0	0	284	1	0
McKittrick	0	0	0	0	199	0	1
Midway-Sunset	3	6	1	65	2,566	2	2
Mountain View	0	1	0	0	186	0	1
Mount Poso	3	3	0	0	264	0	1
Paloma	0	0	1	2,246	1	0	0
Rio Bravo	1	2	1	1,740	33	0	0
Round Mountain	2	4	2	505	202	1	0
Strand	0	2	1	3,260	2	0	0
Ten Section	1	1	1	2,442	28	0	0
Tupman	1	2	0	0	2	0	0
Wasco	0	0	1	2,980	7	0	0
Wheeler Ridge	0	0	0	0	33	0	0
Group No. 2—							
Capitan	0	0	0	0	45	0	0
Elwood	0	0	0	0	81	0	0
Rincon	0	1	1	75	52	0	0
San Miguelito	0	2	2	1,161	22	0	0
Santa Barbara	1	0	0	0	25	0	3
Santa Maria	2	3	1	4,500	307	2	0
Summerland	0	0	0	0	19	1	0
Ventura Avenue	3	14	3	2,090	256	0	0
Ventura-Newhall	2	8	2	725	553	0	0
Watsonville	0	0	0	0	7	0	0
Group No. 3—							
Brea-Olinda	0	1	0	0	357	0	2
Coyote—East	1	0	0	0	78	0	0
Coyote—West	0	0	0	0	64	0	0
Domingues	4	4	1	1,422	161	0	0
El Segundo	0	0	0	0	49	0	0
Huntington Beach	2	4	1	434	537	0	0
Inglewood	0	0	0	0	222	0	1
Lawndale	0	0	0	0	5	0	0
Long Beach	0	2	1	105	1,201	0	0
Los Angeles-Salt Lake	0	0	0	0	111	0	0
Montebello	29	44	18	15,712	269	0	1
Playa Del Rey	0	1	0	0	168	0	3
Potrero	2	1	0	0	14	0	0
Richfield	3	1	0	0	291	0	0
Rosecrans	1	3	4	944	137	0	0
Santa Fe Springs	0	0	0	0	575	0	1
Seal Beach	0	0	0	0	108	0	0
Torrance	1	1	0	0	718	0	0
Whittier	0	0	0	0	141	0	1
Wilmington	18	17	14	6,025	701	0	0
Miscellaneous drilling	11	31	0	0	0	7	0
Group No. 4—gas fields—							
Buena Vista Lake	0	0	0	0	3	0	0
Buttonwillow	0	0	0	0	14	1	3
Chowchilla	0	0	0	0	0	0	0
Delano	0	0	0	0	1	0	0
Dudley Ridge	0	0	0	0	0	0	0
Goleta	0	0	0	0	0	0	0
Marysville Buttes	1	0	0	0	3	0	0
McDonald Island	0	0	0	0	4	0	0
Rio Vista	0	0	0	0	21	0	0
Semi-Tropic	0	0	0	0	0	0	0
Tracy	0	0	0	0	0	0	0
Total August	117	209	81	84,906	14,375	21	21
Total July	90	203	79	71,168	14,303	28	29
Increase (*Decrease)	27	6	2	13,738	72	*7	*8

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Aug. 31, 1939	July 31, 1939	August changes	Dec. 31, 1938 (reclassified)
1 Gasoline-bearing crude	37,876,094	38,200,974	—324,880	36,225,312
2 Nongasoline-bearing crude	14,266,375	14,390,754	—124,379	16,282,177
3 Unblended natural gasoline	2,246,222	2,352,460	—106,238	2,699,455
4 Gasoline (not including distributing and service stations)	13,331,736	13,775,601	—443,865	13,259,369
5 Naphtha distillates	*1,450,221	*1,360,988	+89,235	*1,566,349
6 Gas oil and diesel oil	10,116,384	10,071,238	+45,146	10,539,937
7 Fuel-oil residum	69,779,076	71,275,300	—1,496,224	70,957,881
8 All other stocks	†7,517,674	†7,419,153	+98,521	†6,153,809
Total	156,583,782	158,846,468	—2,262,686	157,684,289
*Estimated amount of unfinished gasoline contained in item 5	1,172,235	1,122,574		1,350,379
†Coke included in item 8	478,374	361,629		92,066

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Ar. Chicago (Union Station) 7:30 am, Monday, Nov. 13

In addition to drawing-room and compartment, there will be double bedroom sleeping cars, deluxe lounge and dining cars. Completely air-conditioned.

The late-afternoon departure permits of dinner with your family on Sunday... gives an entire evening for visiting with fellow delegates and members... then a good night's rest ...breakfast on the train ...and Chicago!

The Frisco-Alton Lines have reserved a number of rooms at the Stevens Hotel, and are prepared to assign hotel accommodations at the time transportation arrangements are made. On arrival at Convention headquarters in the Stevens Hotel, room keys will be ready for delivery without the usual delay.

SPECIAL TRAIN RETURNING will be operated, contingent on the desire of patrons, leaving Chicago, Friday, November 17, at 5:00 pm, arriving Tulsa 8:00 am, Saturday, November 18

FRISCO LINES
ST. LOUIS SAN FRANCISCO RY
P. F. ATKINSON
Division Passenger Agent

For further information, sleeping car and hotel reservations,
PHONE 3-3151
FRISCO TRAVEL BUREAU
Philcade Bldg., Tulsa, Okla.

THE ALTON RAILROAD COMPANY
CHICAGO ST. LOUIS
The ONLY WAY
KANSAS CITY
L. A. DAVIS
District Passenger Agent

J. E. PAYNE, Traffic Manager, Frisco Lines

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status—
General Pet. Corp., No. 15 Poggi, Torrance, Los A.	30- 4-13	4,220	sd. sh. drlg.
Shell Oil, No. 100 Reyes, Dominguez, Los Angeles	33- 3-13	3,900	sd. sh. drlg.
Havenstrite, R. E., No. 1 West, Dominguez, Los A.	32- 3-13	1,168	sd. sh. drlg.
Union Oil, No. 35 Rosecrans, Rosecrans, Los Ange.	19- 3-13	6,680	sd. sh. drlg.
Barnsdall Oil, No. 1 Darling, Rosecrans, Los Ange.	20- 3-13	8,957	flow 400 b.d.
Universal Cons'd. Oil, No. 18 Trust, Rosecrans, L. A.	18- 3-13	2,596	sd. sh. drlg.
Basin Oil, No. 1 Western, Potrero, Los Angeles	28- 2-14	6,377	flow 190 b.d.
Casa Grande Oil, No. 1 Lopez, San Fernando, L. A.	1- 2-15	2,140	gr. sd. drlg.
Tide Water A. O., No. 12 Porter, Aliso Cany., L. A.	27- 3-16	4,194	hd. sd. drlg.
Tide Water A. O., No. 11 Fernando, Aliso C., L. A.	27- 3-16	5,073	O.S. drlg.
Redwood Oil, No. 1-A Mitchell, Mint Canyon, L. A.	22- 4-15	530	idle
Tamas Oil, No. 1 Perkins, Newhall, Los Angeles	14- 3-16	2,350	sd. sh. drlg.
Barnsdall Oil, No. 8 R.S.F., Newhall, Los Angeles	27- 4-17	3,282	sd. sh. drlg.
Brookline Oil, No. 1 Nix, Wilmington, Los Angeles	35- 4-13	5,784	P.B. 3,670
Interstate Inv., No. 2 Harbor, Wilmington, Los An.	35- 4-13	2,581	sd. sh. drlg.
Long Beach Dev., No. 3-W Harbor, Wilming., L. A.	3- 5-13	4,057	completing
Long Beach Dev., No. 5-W Harbor, Wilming., L. A.	3- 5-13	3,925	completing
Long Beach Dev., No. 6-W Harbor, Wilming., L. A.	3- 5-13	3,030	sd. sh. drlg.
Long Beach Dev., No. 7-W Harbor, Wilming., L. A.	3- 5-13	4,034	completing
Long Beach Dev., No. 12-X Harbor, Wilming., L. A.	2- 5-13	3,222	sd. sh. drlg.
McWherter, C. L., No. 4 Channel, Wilming., L. A.	2- 5-13	3,120	completing
Morgan, Roy, No. 1 Ruth, Wilmington, Los Angeles	35- 4-13	3,420	completing
Royalty Service Corp., No. 3 Packard, Wilm., L. A.	33- 4-13	5,716	completing
Signal O. & G., No. 4-S.P., Wilmington, Los Ange.	3- 5-13	4,172	O.S. drlg.
Union Pacific R. R., No. 118, Wilmington, Los An.	34- 4-13	3,678	P.B. 3,611
Union Pacific R. R., No. 119, Wilmington, Los An.	3- 5-13	3,635	O.S. drlg.
Union Pacific R. R., No. 120, Wilmington, Los An.	3- 5-13	4,021	completing
Union Pacific R. R., No. 19-E, Wilmington, Los An.	3- 5-13	2,438	sd. sh. drlg.
Union Pacific R. R., No. 20-E, Wilmington, Los An.	3- 5-13	3,940	sd. sh. drlg.
Kern Oil, No. 31 Monterey, Montebello, Los Ange.	2- 2-12	3,660	sd. sh. drlg.
Union Oil, No. 1 Wilcox, Montebello, Los Angeles	11- 2-12	6,248	to deepen
Union Oil, No. 5 Wilcox, Montebello, Los Angeles	11- 2-12	7,630	flow 280 b.d.
Union Oil, No. 6 Wilcox, Montebello, Los Angeles	11- 2-12	3,050	sd. sh. drlg.
Union Oil, No. 7 Wilcox, Montebello, Los Angeles	11- 2-12	7,640	flow 360 b.d.
Union Oil, No. 35 La Merced, Montebello, Los Ang.	2- 2-12	3,994	sd. sh. drlg.
Union Oil, No. 10 Howard & Smith, Monte., Los A.	11- 2-12	7,615	O.S. drlg.
Union Oil, No. 7 Paul Howard, Montebello, Los An.	11- 2-12	7,630	flow 615 b.d.
Albertson Oil, No. 1 Schnakenburg, Monte., Los A.	3- 2-12	7,686	flow 610 b.d.
Beacon Oil, No. 1 Caneer, Montebello, Los Angeles	11- 2-12	7,460	sd. sh. drlg.
Bush Oil, No. 1 Mihlfred, Montebello, Los Angeles	3- 2-12	5,993	sd. sh. drlg.
Bush Oil, No. 1 Zanetti, Montebello, Los Angeles	3- 2-12	7,384	sd. sh. drlg.
Caminol, No. 2-16 Cowan, Montebello, Los Angeles	2- 2-12	7,440	O.S. drlg.
Caminol, No. 3-17 Cowan, Montebello, Los Angeles	3- 2-12	4,366	sd. sh. drlg.
C. A. P. Oil, No. 1 Dutch, Montebello, Los Angeles	11- 2-12	6,288	sd. sh. drlg.
Crestline Oil, No. 1 Beverly, Montebello, Los Ange.	11- 2-12	7,430	O.S. drlg.
Crail Brothers, No. 2 Cowan, Montebello, Los Ang.	1- 2-12	7,183	sd. sh. drlg.
Dutch Oil, No. 1 Schelnik, Montebello, Los Angeles	3- 2-12	7,282	fish D.P.
Fullerton Oil, No. 2 Scott, Montebello, Los Angeles	1- 2-12	7,630	tested wet
Fullerton Oil, No. 3 Scott, Montebello, Los Angeles	1- 2-12	1,467	sd. sh. drlg.
Graham-Loftus Oil Corp., No. 2 Coffman, M., L. A.	11- 2-12	7,547	O.S. drlg.
Golden Eagle Oil Corp., No. 1 Lehman, M., Los An.	11- 2-11	2,485	sd. sh. drlg.
Hathaway Oil, No. 2 Dore, Montebello, Los Angel.	11- 2-12	7,361	sd. sh. drlg.
Larson Drlg., No. 3 Van Deusen, Montebello, L. A.	11- 2-12	5,366	sd. sh. drlg.
Mabee, J. E., No. 36 Monterey, Montebello, Los An.	3- 2-12	7,685	O.S. drlg.
Master Pet., No. 1 Grant, Montebello, Los Angeles	2- 2-12	3,994	sd. sh. drlg.
Mont. Res. Oil, No. 1 Reservoir, Montebello, Los A.	2- 2-12	7,637	completing
Mono Oil, No. 1 Foreman, Montebello, Los Angeles	2- 2-12	7,360	O.S. drlg.
Montebello Oil, No. 1 Nordon, Montebello, Los An.	3- 2-12	6,481	sd. sh. drlg.
Pacific-Amer. Oil, No. 1 Groen, Montebello, Los An.	11- 2-12	7,530	O.S. drlg.
Pueblo Oil, No. 2 Bird, Montebello, Los Angeles	11- 2-12	2,366	sd. sh. drlg.
Pongratz Pet., No. 2 Newmark, Montebello, Los An.	3- 2-12	6,698	sd. sh. drlg.
Sunset Oil, No. 1 Howell, Montebello, Los Angeles	11- 2-12	7,660	flow 530 b.d.
Sunset Oil, No. 1 Robinson, Montebello, Los Angel.	12- 2-12	5,494	sd. sh. drlg.
Star Pet., No. 1 Caneer, Montebello, Los Angeles	11- 2-12	6,097	sd. sh. drlg.
Texas, No. 1 Wilcox, Montebello, Los Angeles	3- 2-12	7,586	O.S. drlg.
Traders Oil, No. 2 Center, Montebello, Los Angeles	2- 2-12	6,987	sd. sh. drlg.
United Mont. Oil, No. 1 Lot, Montebello, Los Ange.	11- 2-12	7,666	completing
United Mont. Oil, No. 2 Lot, Montebello, Los Ange.	11- 2-12	7,437	O.S. drlg.
United Mont. Oil, No. 3 Lot, Montebello, Los Ange.	11- 2-12	6,280	sd. sh. drlg.
Wood-Callahan Oil, No. 1 Thill, Montebello, Los An.	11- 2-12	6,584	sd. sh. drlg.
York Oil, No. 6 Mulholland, Montebello, Los Ange.	2- 2-12	7,443	sd. sh. drlg.
York Oil, No. 1 Long, Montebello, Los Angeles	3- 2-12	7,443	O.S. drlg.
Kelso, F. W., No. 1 Brea, Puente Hills, Los Angeles	12- 2-10	2,405	fish D.P.
Dormax Oil, No. 1 Signal, Long Beach, Los Angeles	30- 4-12	9,896	O.S. drlg.
Atlantic Oil, No. 12 Signal, Long Beach, Los Ange.	19- 4-12	3,230	rig to pmp.
Richfield Oil Corp., No. 8-B City, Long Beach, L. A.	29- 4-12	4,175	sd. sh. drlg.
El Hondo Pet., No. 1 Venago, Long Beach, Los A.	24- 4-13	8,895	sd. sh. drlg.
Rolling Hills Pet., No. 1 Weston, P. Verdes, L. A.	27- 4-14	6,490	cleaning out
Great Northern Oil, No. 1 Oak, Richfield, Los Ang.	28- 3- 9	2,296	sd. sh. drlg.
Sonwell Oil, No. 1 Anaheim, East Coyote, Orange	13- 3-10	3,720	sd. sh. drlg.
Union Oil, No. 21 Hole, East Coyote, Orange	22- 3-10	4,161	sd. sh. drlg.
Master Pet., No. 1 Wright, East Coyote, Orange	19- 3- 9	4,160	will deepen
Southwest Expl., No. 21 State, Hunt. Beach, Orange	10- 6-11	2,761	sd. sh. drlg.
Southwest Expl., No. 22 State, Hunt. Beach, Orange	10- 6-11	5,203	pmp. 685 b.d.
Owen, W. D., No. 1 Montgomery, Hunt B., Orange	36- 5-11	3,904	sd. sh. drlg.
Petremont Oil, No. 2 Burton, Hunt. Beach, Orange	36- 5-11	4,500	O.S. drlg.

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status—
Union Oil, No. 2-3 O'Donnell, Santa Maria, Santa B.	29-10-34	5,180	sd. sh. drlg.
Union Oil, No. 6 Vicente, Santa Maria, Santa Barb.	21-10-34	735	sd. sh. drlg.
Lomas, E. H., No. 1 Reg, Santa Maria, Santa Barb.	29-10-34	5,601	O.S. drlg.
Gerard, W. R., No. 2 Breneiser, Santa Maria, S. B.	27-10-34	3,540	sd. sh. drlg.
Sunset Oil, No. 1 Shore, Carpinteria, Santa Barbara	32- 4-25	3,413	gr. sd. drlg.
Trans-Oceanic Oil, No. 1 Mesa, Santa Barbara, S. B.	28- 4-27	1,584	pmp. 50 b.d.
Coronet Oil, No. 1 Crown, Ojai, Ventura	17- 4-21	2,298	pmp. wtr.
Renard Oil Corp., No. 1, Sespe, Ventura	6- 4-19	716	hd. sh. drlg.
Continental Oil, No. 12 Grubb, San Miguelito, Ven.	24- 3-24	6,940	sd. sh. drlg.
C. C. M. Oil, No. 2-B Hobson, Rincon, Ventura	8- 3-24	4,046	rigging up
C. C. M. Oil, No. 28-B Hobson, Rincon, Ventura	15- 3-24	1,784	sd. sh. drlg.
Tide Water A. O., No. 42 V.L.W., Ventura Ave., V.	23- 3-23	8,594	sd. sh. drlg.
Tide Water A. O., No. 44 V.L.W., Ventura Ave., V.	23- 3-23	8,098	sd. sh. drlg.
Tide Water A. O., No. 15 McGonigle, Vent. Ave., V.	23- 3-23	9,355	sd. sh. drlg.
Tide Water A. O., No. 16 McGonigle, Vent. Ave., V.	23- 3-23	6,983	sd. sh. drlg.
Tide Water A. O., No. 66 Lloyd, Ventura Ave., Ven.	26- 3-23	6,434	flow 141 b.d.
Tide Water A. O., No. 121 Lloyd, Ventura Ave., V.	23- 3-23	8,630	sd. sh. drlg.
Tide Water A. O., No. 21 Hartman, Vent, Ave., V.	22- 3-23	5,884	fish D.P.
Shell Oil, No. 102 Taylor, Ventura Ave., Ventura	29- 3-23	7,706	flow 1,962 b.d.
Shell Oil, No. 103 Taylor, Ventura Ave., Ventura	21- 3-23	5,280	sd. sh. drlg.
Shell Oil, No. 106 Taylor, Ventura Ave., Ventura	29- 3-23	5,381	sd. sh. drlg.
Shell Oil, No. 107 Taylor, Ventura Ave., Ventura	29- 3-23	508	sd. sh. drlg.
Shell Oil, No. 108 Taylor, Ventura Ave., Ventura	21- 3-23	1,853	sd. sh. drlg.
General Pet. Corp., No. 16 Barnard, Vent. Ave., V.	28- 3-23	8,452	fishing
Cal. Alliance Pet., No. 1 Hartman, Vent. Ave., Ven.	22- 3-23	7,495	sd. sh. drlg.
Brit. Amer. Pet., No. 9 Hartman, Ventura Ave., V.	21- 3-23	2,094	sd. sh. drlg.
Lloyd Corp., No. 3 Dabney, Ventura Ave., Ventura	23- 3-23	9,500	O.S. drlg.
Lloyd Corp., No. 4 Dabney, Ventura Ave., Ventura	23- 3-23	8,993	sd. sh. drlg.
Belridge Oil, No. 1-27, North Belridge, Kern	1-28-20	8,070	sd. sh. drlg.
Belridge Oil, No. 28-15, North Belridge, Kern	28-27-20	7,760	sd. sh. drlg.
Belridge Oil, No. 26-39, North Belridge, Kern	26-27-20	8,243	flow 910 b.d.
Tide Water A. O., No. 24, North Belridge, Kern	21-27-20	8,450	sd. sh. drlg.
Abbott, F. E., No. 1 Gamble, Blackwell's Corner, K.	7-27-20	463	sd. sh. drlg.
Texas, No. 1 Beer, Devil's Den, Kern	6-26-19	2,583	sd. sh. drlg.
O'Reily, Frances, No. 2 Seale, Edison, Kern	5-30-29	4,103	fish D.P.
McDonald & Dearin, No. 3 Kernco, Kern Front, K.	10-28-27	802	sd. sh. drlg.
Dick, W. T., No. 6 Kern, Kern River, Kern	34-28-28	430	sd. sh. drlg.
Dick, W. T., No. 8 Kern, Kern River, Kern	34-28-28	476	sd. sh. drlg.
Dick, W. T., No. 10 Kern, Kern River, Kern	34-28-28	338	sd. sh. drlg.
Crestmont Oil, No. 1 Hesse, Kern River, Kern	22-28-28	3,087	gr. sd.; abd.
Sleeper Ridge Oil, No. 1 Kern, Kern River, Kern	15-29-28	1,480	may abd.
Helm & Smith, No. 15 Kern, Kern River, Kern	34-28-28	500	sd. sh. drlg.
Hast Oil, No. 6 Kern, Kern River, Kern	34-28-28	565	will P.B.
D. B. K., No. 11 Kern, Kern River, Kern	34-28-28	451	rig to pmp.
Ring Oil, No. 8 Shapiro, Mount Poso, Kern	32-26-28	1,710	completing
Vedder Pet., No. 21-1 Lambert, Mount Poso, Kern	21-26-28	1,527	O.S. drlg.
Hogan Pet., No. 1 Wible, Mountain View, Kern	23-30-29	5,086	sd. sh. drlg.
Allied Pet., No. 33 Allied, Mountain View, Kern	19-30-29	3,141	sd. sh. drlg.
Texas, No. 2 Jewett, Arvin, Kern	16-31-29	6,482	flow 90 b.d.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill-stem test.
D.P., drill pipe
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe-line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas, and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.O.O., waiting on orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Richfield Oil Corp., No. 2 Mott, Arvin, Kern	9-31-29	5,798	sd. sh. drlg.
Morton, L. C., No. 1 Barlow Farms, Arvin, Kern	25-31-29	5,080	gr. sd. drlg.
Western Gulf Oil, No. 44-B, KCL, Fruitvale, Kern	22-29-27	2,198	sd. sh. drlg.
Meridian Pet. Corp., No. 2 Deep Test, Fruitvale, K.	23-29-27	8,531	P.B. 3,742
Richfield Oil Corp., No. 1, KCL, Fruitvale, Kern	29-29-27	1,945	sd. sh. drlg.
Union Oil, No. 4-23 Bowerbank, Goose Lake, Kern	25-29-24	10,270	cleaning out
Union Oil, No. 41-34, KCL, Rio Bravo, Kern	34-28-25	10,196	sd. sh. drlg.
Superior Oil, No. 1 Smith, Rio Bravo, Kern	34-28-25	7,997	sd. sh. drlg.
Superior Oil, No. 1 Weber, Rio Bravo, Kern	27-28-25	10,134	sd. sh. drlg.
Standard Oil, No. 1 Ross, Greeley, Kern	20-29-26	10,600	sd. sh. drlg.
Standard Oil, No. 11-20, KCL, Greeley, Kern	18-29-26	10,102	sd. sh. drlg.
Standard Oil, No. 11-21, KCL, Greeley, Kern	18-29-26	9,080	sd. sh. drlg.
Standard Oil, No. 12-5, KCL, NW Greeley, Kern	7-29-26	10,203	gr. sd. drlg.
General Pet. Corp., No. 1 Sullivan, NE Greeley, K.	12-29-26	11,312	hd. sh. drlg.
Continental Oil, No. 2-D, KCL, Bellevue, Kern	14-30-26	14,051	will P.B.
Shell Oil, No. 21-28-B, KCL, Ten Section, Kern	28-30-26	6,591	sd. sh. drlg.
Tide Water A. O., No. 46-7-E, KCL, Strand, Kern	7-30-26	8,372	O.S. drlg.
Shell Oil, No. 75-12-B, KCL, Strand, Kern	12-30-25	8,271	sd. sh. drlg.
Ohio Oil, No. 15-E, KCL, Canal, Kern	14-30-25	7,825	sd. sh. drlg.
Shell Oil, No. 6-14-A, KCL, Canal, Kern	14-30-25	6,998	sd. sh. drlg.
Richfield Oil Corp., No. 12-33-A, KCL, Tupman, K.	33-30-25	9,331	P.B. 9,040
Richfield Oil Corp., No. 41-32-A, KCL, Tupman, K.	32-30-25	3,693	sd. sh. drlg.
Richfield Oil Corp., No. 67-4-B, KCL, Cole's Lv., K.	4-31-25	9,232	O.S. drlg.
Richfield Oil Corp., No. 76-4-B, KCL, Cole's Lv., K.	4-31-25	8,580	sd. sh. drlg.
Standard Oil, No. 20-2, KCL, Cole's Levee, Kern	9-31-25	8,660	sd. sh. drlg.
Standard Oil, No. 20-3, KCL, Cole's Levee, Kern	9-31-25	8,630	sd. sh. drlg.
Standard Oil, No. 20-4, KCL, Cole's Levee, Kern	9-31-25	8,955	sd. sh. drlg.
Ohio Oil, No. 4-F, KCL, Cole's Levee, Kern	11-31-25	9,491	sd. sh. drlg.
Ohio Oil, No. 5-F, KCL, Cole's Levee, Kern	10-31-25	8,915	O.S. drlg.
Tide Water A. O., No. 81, KCL, Cole's Levee, Kern	14-31-25	10,350	sd. sh. drlg.
Union Oil, No. 58-11, KCL, Cole's Levee, Kern	11-31-25	10,166	sd. sh. drlg.
Baker & Sonne, No. 1 Leyse, Midway-Sunset, Kern	20-32-23	2,730	P.B. 2,128
Quality Oil, No. 6 W.P., Midway-Sunset, Kern	27-32-23	1,975	pmp. O. & W.
Merritt-Annex Oil, No. 8 Fried, Midway-Sunset, K.	25-12-24	2,494	completing
General Pet. Corp., No. 1 B.V.A., Midway-Sunset, K.	1-31-24	10,120	hd. sh. drlg.
Signal O. & G., No. 6 Kendon, Midway-Sunset, Kern	35-32-23	1,382	sd. sh. drlg.
Shell Oil, No. 45-9 B.V.A., Midway-Sunset, Kern	9-32-25	9,390	sd. sh. drlg.
National Oil, No. 34 Sunset, Midway-Sunset, Kern	35-32-23	1,084	sd. sh. drlg.
Ohio Oil, No. 43-3-B, KCL, Paloma, Kern	3-32-26	5,684	sd. sh. drlg.
Western Gulf Oil, No. 74-3-A, KCL, Paloma, Kern	3-32-26	4,592	sd. sh. drlg.
Richfield Oil Corp., No. 81-36 B.V.A., B. V. L., K.	36-31-25	8,360	sd. sh. drlg.
Continental Oil, No. 1-F, KCL, San Emidio, Kern	5-10-21	9,221	gr. sd. drlg.
Bannow, L. E., No. 1 Irwin, San Emidio, Kern	15-10-23	1,126	dry; abd.
Shell Oil, No. 52-2-13-A, KCL, San Emidio, Kern	13-11-22	11,585	hd. sh. drlg.
Par Pet., No. 1 Line, Antelope Valley, Kern	32-25-17	3,020	sd. sh. drlg.
Standard Oil, No. 51-19-B fee, NE Coalinga, Fresno	19-19-16	4,955	sd. sh. drlg.
Union Oil, No. 57-18 Cook, NE Coalinga, Fresno	18-19-16	5,996	sd. sh. drlg.
Amerada Pet. Corp., No. 3-17 S.P.L., NE Coal., Fr.	17-19-16	5,882	sd. sh. drlg.
Superior Oil, No. 1 Husong, NE Coalinga, Fresno	18-19-16	6,185	sd. sh. drlg.
Wilshire Annex Oil, No. 64-30-B, C Coalinga, Fres.	30-19-16	8,372	fish packer
Lytle, R. S., Agent, No. 53-7-F, SE Coalinga, Fresno	7-20-16	5,867	sd. sh. drlg.
Lytle, R. S., Agent, No. 64-7-4, SE Coalinga, Fresno	7-20-16	7,090	sd. sh. drlg.
Lytle, R. S., Agent, No. 28-18-F, SE Coalinga, Fres.	18-20-16	7,838	flow 2,040 b.d.
Universal Cons'd. Oil, No. 81-24-C, SE Coalinga, Fr.	24-20-15	4,455	sd. sh. drlg.
Texas, No. 3 Exeter fee, SE Coalinga, Fresno	6-20-16	7,820	sd. sh. drlg.
Standard Oil, No. 62-13-C fee, SE Coalinga, Fresno	13-20-15	6,785	sd. sh. drlg.
Standard Oil, No. 75-13-C fee, SE Coalinga, Fresno	13-20-15	5,182	sd. sh. drlg.
Superior Oil, No. 5 fee, SE Coalinga, Fresno	7-20-16	8,092	O.S. drlg.
Superior Oil, No. 4 Huffman, Kettleman North, Fr.	29-21-17	9,000	sd. sh. drlg.
K. N. D. A., No. 25-22-Q, Kettleman North, Kings	22-22-18	7,692	sd. sh. drlg.
K. N. D. A., No. 38-22-Q, Kettleman North, Kings	22-22-18	6,341	br. sh. drlg.
K. N. D. A., No. 56-22-Q, Kettleman North, Kings	22-22-18	5,690	br. sh. drlg.
K. N. D. A., No. 25-26-Q, Kettleman North, Kings	26-22-18	7,920	flow 2,814 b.d.
K. N. D. A., No. 36-26-Q, Kettleman North, Kings	26-22-18	920	sd. sh. drlg.
K. N. D. A., No. 47-26-Q, Kettleman North, Kings	26-22-18	6,182	sd. sh. drlg.
K. N. D. A., No. 41-28-Q, Kettleman North, Kings	28-22-18	7,040	br. sh. drlg.
Standard Oil, No. 2-19-J, Kettleman North, Fresno	19-21-17	10,950	O.S. drlg.
Standard Oil, No. 27-19-J, Kettleman North, Fresno	19-21-17	9,594	gr. sh. drlg.
Standard Oil, No. 72-19-J, Kettleman North, Fresno	19-21-17	9,660	sd. sh. drlg.
Standard Oil, No. 27-7-Q, Kettleman North, Kings	7-22-18	9,130	cleaning out
Standard Oil, No. 43-7-Q, Kettleman North, Kings	7-22-18	8,598	hd. sh. drlg.
Standard Oil, No. 54-7-Q, Kettleman North, Kings	7-22-18	4,070	sd. sh. drlg.
Standard Oil, No. 63-7-Q, Kettleman North, Kings	7-22-18	4,034	sd. sh. drlg.
Standard Oil, No. 32-17-Q, Kettleman North, Kings	17-22-18	5,475	sd. sh. drlg.
Standard Oil, No. 63-17-Q, Kettleman North, Kings	17-22-18	8,490	flow 2,989 b.d.
Standard Oil, No. 72-17-Q, Kettleman North, Kings	17-22-18	5,396	sd. sh. drlg.
Standard Oil, No. 52-21-Q, Kettleman North, Kings	21-22-18	5,466	sd. sh. drlg.
Standard Oil, No. 74-21-Q, Kettleman North, Kings	21-22-18	5,161	sd. sh. drlg.
Standard Oil, No. 85-21-Q, Kettleman North, Kings	21-22-18	7,954	sd. sh. drlg.
Standard Oil, No. 32-27-Q, Kettleman North, Kings	27-22-18	6,852	cleaning out
Standard Oil, No. 61-27-Q, Kettleman North, Kings	27-22-18	8,413	flow 1,200 b.d.
Compass Oil, No. 1 Points, Deer Creek, Tulare	8-23-26	1,767	sd. sh. drlg.
Priest Valley Pet., No. 1 Greve, Priest V., Monterey	22-20-12	1,150	sd. sh. drlg.
Texas, No. 3 Eureka, Eureka, Humboldt	21- 3- 1	5,067	shut in
Seaboard Oil, No. 1 Howard, Bear Creek, Merced	6- 8-11	3,683	sd. sh. drlg.
Cons'd. Pet., No. 1 Ashurst, Los Pinos, San Benito	11-17-11	653	sd. sh. drlg.
Texas, No. 1 Welch, Rio Vista gas field, Sacramento	5- 3- 3	894	sd. sh. drlg.

OKLAHOMA

Week Ending October 29

NORTHERN OKLAHOMA

Caddo County

Sinclair Prairie Oil Co. No. 1 Gorman, SW NW NW Sec. 1-16-13w. S. heavy oil; cd. 6,442-49 ft.; Wdfrd. 6,600 ft.; drlg. 7,152 ft.

Canadian County

W. R. Ramsey's No. 1 Mansfield, C NW NE Sec. 16-14-9w. Lytn. 6,250-80 ft., N.S.; drlg. 8,112 ft.

Cleveland County

Nels Burton No. 1 Boggs, NE NE SE Sec. 16-9-2w. 2nd Wlx. 7,585 ft.; T.D. 7,646 ft.; P.B. 7,473 ft.; shot and acd.; swbd. 47 B.O. and 50 B.W. in 16 hrs.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; swbd. 250 B.F. in 24 hrs.; 10% B.S.

Sinclair-Prairie No. 1 Ward, SE SE SE Sec. 30-7-1. Hntn. 6,185 ft.; Vla. 6,408 ft.; open 30 min. at 6,800 ft., rec. S. W.; P.B. to 6,782 ft.; swb. 106 B.O. in 24 hrs.; hvy. blk. oil; drlg. 7,048 ft.

Comanche County

Mid Night Oil No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; drlg. 958 ft.

Creek County

Sunray Oil Co. No. 1 Harris, SW SW NE Sec. 30-14-7. T.D. 2,927 ft.; est. 370,000 cu. ft. gas.

Garvin County

Duckworth & Jennings' No. 1 Bowie, NW NE SE Sec. 3-4-3. W.O.C. 60 ft.

Robinson & Midco's No. 1 Clay, SW SW NW Sec. 21-4-3. Drlg. 2,756 ft.

Grady County

Alma Oil Co.'s No. 5 Pettit (O.W.D.D., SE SE SE Sec. 11-4-8w. Drlg. 2,970 ft.

Sinclair Prairie's No. 4 Charleston, NE NE SE Sec. 27-5-8w (O.W.D.D.); gas 3,330-50 ft.; drlg. sh. 3,876 ft.

Grant County

Magnolia Pet. Co.'s No. 1 Margay-Johnson, SW SW NE Sec. 29-25-8w. Drlg. Miss. 6,033 ft.

Greer County

Butler's No. 1-A Meyers, NE SE NW Sec. 25-7-21w. Drlg. 896 ft.

Jackson County

English Drlg. Co.'s No. 1 Aetna Life, SE SE NE Sec. 26-3-20w. Gr. wsh. 1,034 ft. and S.G.; T.D. 1,240 ft.; lost hole; D.&A.

Bob Helton et al's No. 1 Lee, NE SE NW Sec. 36-2-19w. Drlg. 200 ft.

Jefferson County

H. M. Weir No. 1 Carmichael, NE NE SW Sec. 23-7s-7w. Drlg. 3,525 ft.

Kingfisher County

Anderson-Prichard No. 1 Geis, C NE SW Sec. 15-18-9w. Lytn. 6,450-6,510 ft.; drlg. Miss. 8,393 ft.

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Miss. 7,014 ft.; Woodford 7,531 ft.; Msnr. 7,562 ft.; Wlx. 8,-105 ft.; 2nd Wlx. 8,275 ft.; T.D. 8,330 ft.; S.D.O.

Kiowa County

Bollen-Dillard & Roberts No. 1 Holcomb, NE NE SW Sec. 25-7-19w. T.D. 1,400 ft.; rmg. to run 5-in.

Frank Dillard et al's No. 1 Hobbs, SE SE NW Sec. 35-6-17w. Gr. wsh. 555 ft.; drlg. 593 ft.

Hagerling et al No. 1 Bozeman, SE SE NE Sec. 14-5-18w. Drlg. 1,286 ft.

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. Drlg. 1,500 ft.

Lincoln County

Black Gold No. 1 Locquchment, NE NE NE Sec. 28-14-6. T.D. 3,175 ft.; est. 5 B.O.P.D.; S.D.

R. L. Kemp's No. 1-A Burke, NE SW NE Sec. 20-17-6. Prue 2,864-2,908 ft., T.D.; swbg. through tbg.; 900 lb. C.P.; will not flow.

Summitt Drlg. Co.'s No. 1 Percival, SE SE SE Sec. 24-12-3. Drlg. 2,780 ft.

Noble County

Franks & Ellis' No. 1 Stranka, SW SW NW Sec. 35-24-1w. T.D. 1,180 ft.; abd.

Oklahoma County

Hall & Briscoe No. 1 Thompson, SW SW NE Sec. 28-13-1. S.O. 4,803-27 ft.; T.D. 6,058 ft.; P.B. 5,185 ft.; C.O. to 4,850 ft.; to perf.

Osage County

Midco Oil Co.'s No. 1 Osage, NE NE SW Sec. 17-22-8. S.D. 2,847 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. Drlg. 3,250 ft.

Payne County

C. R. Hoagland No. 1 Stanolind, SE SE SW Sec. 27-18-4. Miss. 3,800 ft.; T.D 3,905 ft.; D.P. stk.

C. F. Newsom's No. 1 Jones, NE NE SW Sec. 15-18-3. Miss. 4,019 ft.; T.D. 4,033 ft.; pipe stk.

Pottawatomie County

Neustadt et al No. 1 Howeth, NE SE NE Sec. 14-8-4. Sd. and S.S.O. 3,455-60 ft.; S.D. 5,060 ft.

Sequoyah County

Thompson Bros. No. 1 Ruby, NW NW NE Sec. 30-12-22. Hntn. 1,451 ft.; T.D 1,912 ft. (cor.); S.D.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. T.D. 14,540 ft.; to D.D.

SOUTHERN OKLAHOMA

Choctaw County

Letchfield & Kirksly No. 1 Schuester, SW SE SW Sec. 13-6s-14. Cd. 1,169-81 ft., L.&sd.; S.D. 1,184 ft. for core bbl.

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. T.D. 1,634 ft.; W.O.C.

Jefferson County

Fred Land et al's No. 1 Barrett, NE SE SE Sec. 14-6s-6w. Sd. 1,852 ft., S.O.; D. P. stk. at 1,100 ft.; T.D. 1,890 ft.

Love County

Neff et al's No. 1 Brahma, NW NW SW Sec. 35-6s-2e. S.S.O. 1,555-90 ft.; drlg. 2,620 ft.

Marshall County

Hughes et al No. 1 Vittitto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; T.D. 7,110 ft.; S.D.

Johnson et al No. 1 Godfrey, SW SE NE Sec. 14-6s-6e. Vla. 2,627 ft; S.S.O.; drlg. 2,759 ft.

KANSAS

Week Ending October 28 (Descriptions are East unless marked otherwise)

Barton County

C. E. Ash et al's No. 1 Montgomery, NW NW NW Sec. 11-16-11w. Drlg. 725 ft.

Aylward Prod. et al's No. 1 Harzman, C W½ NW SW Sec. 33-16s-11w. Lans. 3,056 ft.; Arb. 3,350-56 ft., T.D.; S.S. O.; ripped csg. 3,124-32 ft.; S.S.O.

B. B. & M. Drlg. Co.'s No. 1 Krier, CEL SE SE Sec. 30-16-11w. Drlg. 2,535 ft.

Crown Pet. Co. No. 1 Marchand, NE SE NW Sec. 13-20s11w. Drlg. 2,910 ft.

Seaney & Clampitt's No. 1 Schauf, CSL E½ SW Sec. 1-16-12w. Lans. 3,051 ft.; S.S.O. and wtr. in core 3,142-56 ft.; Arb. 3,358-91 ft., T.D.; rng. Schlmbgr.

Butler County

Allison & Talbott's No. 1 Zink, SE SE NE Sec. 32-29-5. C.O. 755 ft.

Carey & Jennings No. 1 Kelly, C SW Sec. 20-27-4. S.D. 2,660 ft.

Cromwell & Lewis No. 1 Stern, NW NW NW Sec. 27-27-6e. M.I.M.

Marylyn Oil et al No. 1-A Hoard, SW NE NE Sec. 28-29-8. Lans. 1,625 ft.; S.S.O. 2,095 ft.; S.O. 2,355-60 ft.; Miss. 2,836-41 ft.; 200 ft. O.I.H. in 8 hrs.; no test.

C. H. Pechin et al's No. 1 Hartenbower (O.W.D.D.), NW NW NW Sec. 16-29-6. O.T.D. 3,257 ft.; cg. 2,400 ft.; to test Peru sd.

Coffey County

Hollett's No. 1 Butler, SE SW SE Sec. 28-20-15. Drlg. 1,304 ft.

Cowley County

Allred's No. 1 Peninger, C NE NW Sec. 35-32-5. Drlg. 200 ft.

Garden's No. 1 Rahn, SW SW NW Sec. 13-34-5. Bart. 2,936 ft.; S. 2 B.O.P.H.; S.D.O.

E. B. Shawyer's No. 1 Henderson, C W½ NE NE Sec. 4-33-6. Drlg. 2,788 ft.

Gerald Smith et al's No. 1-B Hanev, CEL NW SW Sec. 9-33-6. R.U.S.T. 3,495 ft.; Arb. 3,517-21 ft., T.D.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1. Hntn. 2,807 ft.; Vla 3,048-55 ft.; S.S.O. 3,156-65 ft.; base Vla. 3,218 ft.; H.F.W. 3,240 ft.; inc. wtr. 3,256 ft.; S.D.O. 3,266 ft.

Douglas County

Greenway Oil Co.'s No. 1 Grosdedier, C E½ SE NE Sec. 24-13-20. Drlg. 520 ft.

Franklin County

Security O. & G. Co. No. 1 Teail, C SW NW Sec. 11-17-17. Rng. 8-in. 1,050 ft.

Greenwood County

Chas. Barker's No. 1 Gregg, SW NW SE Sec. 35-25-12. (O.W.D.D.). O.T.D. 1,-660 ft.; drlg. 1,955 ft.

Henderson & Marcus' No. 1-A Smith, NW NW SE Sec. 8-24-11. Dry Bart. sd. 1,768-88 ft.; T.D. 1,862 ft.; D.&A.

A. A. Hinze et al's No. 1 Hester, NW SW NE Sec. 1-22-12. S.D. 510 ft.

Marylyn Oil Co.'s No. 1 Burke, NE NE SW Sec. 27-24-11. R.U. mch.

Lawrence Spencer's No. 1 Edwards, NW NW SW Sec. 32-24-12. Miss. 1,793 ft.; T.D. 1,903 ft.; D.&A.

Jefferson County

Continental Oil's No. 1 Berridge, NW NW SW Sec. 8-9-17. Vla. 2,780 ft.; Wlx. 2,865 ft.; Arb. 2,940 ft.; N.S.; D.&A.

E. W. Mosbacker et al's No. 1 McLaughlin, SW NE NW Sec. 4-10-20. Drlg. 725 ft.

C. L. Sheedy et al's No. 1 O'Neill, SE SW NW Sec. 34-8-19. Drlg. below 2,-500 ft.

Kingman County

Skelly Oil Co. No. 1 Miller, CSL N½ NE Sec. 31-27-10w. Set 7-in. 4,067 ft.; R.U. S.T.

McPherson County

Westgate-Greenland's No. 1 McCulle, CEL NE SW Sec. 29-17-1w. Rng. csg. 158 ft.

Marion County

Polhamus et al's No. 1 Noone, C SW NE Sec. 18-18-3. Rig.

Montgomery County

Lerke & Whortan No. 1 Clemmer, C SW SW Sec. 21-32-15. Arb. 1,530 ft.; set 5-in. csg.; W.O.C.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; S.G. in sh. 1,618-24 ft.; S.D. 1,650 ft.

Pratt County

Skelly Oil Co. No. 1 Royse, C SW Sec. 9-28-11w. Lans. 3,804 ft.; Vla. 4,246-49 ft.; T.D. 4,268 ft.; S.S.O.; 802,000 cu. ft. gas.

Rice County

H. B. Garden et al's No. 1 Misener, C N½ NW NE Sec. 21-21-7w. R.R.

Fred Jones et al No. 1 Benhke, NW SW NW Sec. 25-18-10w. Congl. 3,181 ft.; quartzite 3,209-14 ft., T.D.; H.F.O.; W. O.C.

Phoenix Drlg. No. 1 Linville, SW SW SE Sec. 4-20-10w. Simp. 3,375 ft.; Arb. 3,388 ft.; acd. and P. 30 B.O.P.D.
Saco Oil's No. 1 Habeger, SE SE SW Sec. 12-18-10w. Drlg. 1,435 ft.
Vickers Pet. Co. No. 1-A Rodenberg, CNL NW¼ Sec. 8-18-10w. Lans. 2,930 ft.; Arb. 3,265-81 ft., T.D. N.S.

Rooks County

Broadview Oil No. 1 Baxter, NE SW SW Sec. 35-8-16w. Lans. 3,180 ft.; S.S.O.; T.D. 3,263 ft.; P. 89 B.O. in 7 hrs.; pot. 269 B.O.P.D.

Russell County

Ray Shaffer et al's No. 1 Shaffer, NE NE SW Sec. 9-13-11w. Drlg. 865 ft.

Stafford County

Continental Oil Co. No. 1 Keller, SE SE SE Sec. 15-24-13w. S.O. 3,733-43 ft., cd. 4,111-16 ft. and rec. 5 ft. sat.; T.D 4,116 ft.; 3,900 ft. O.I.H.

Woodson County

Billerman et al's No. 1 Rauscher, CSL NW SE Sec. 19-23 15. Dry sd. 1,460-
Sirg, Hanley & Sheedy No. 1 Pingrey, C S½ SE Sec. 22-25-15. Spd.
Henderson & Keene's No. 2 Piper, NW NW SE Sec. 19-23-15. Dry sd. 1,460-70 ft.; Miss. 1,536-50 ft., T.D.; D.&A.

MISSOURI

Adair County

J. W. Eddington et al's No. 1 Clark, NW NE SE Sec. 8-63-14w. Drlg. below 200 ft.
Ward McGinnis' No. 1 Laughlin, SE SE SW Sec. 16-53-34w. Loc.
Morrow & Rodgers and Benedum-Trees' No. 1 Cooley, SE SE NW Sec. 33-64-17w. S.O. 871-86 ft.; T.D. 965 ft.; may acidize.

Andrew County

Davis Bros. et al No. 1 Gee, NW NW SE Sec. 28-60n-35w. S.O. in Bart. 996 ft.; S.O. 2,065-75 ft.; Vla. 2,381 ft.; S. D. 2,700 ft.
E. F. Neely et al's No. 1 Shores, SE SE SE Sec. 12-60-37w. M.I.M.

Bates County

Monarch Roy.'s No. 1 Lee, C SW SE Sec. 11-39-30w. S.O. 834-36 ft.; T.D. 1,446 ft.; temp. abd.

Bollinger County

Delmund Oil No. 1 Cooper, SE SE SE Sec. 14-29-9e. S.D. 1,780 ft.

Buchanan County

Miller et al's No. 1 Carrough, C SE SE Sec. 24-57-35w. T.D. 95 ft.; M.I.M.

Butler County

Coastal Pet. et al No. 1 Pierson, SW NE NW Sec. 27-22-6e. S.D. 149 ft. (cor.)

Charlton County

L. E. Mummert et al's No. 1 Rickert, NW NE SE Sec. 26-54-20w. Loc.

Clay County

Pabelo Dev. Co.'s No. 5-A Robb, NW NW SE Sec. 36-52-32. T.D. 600 ft., S.G.; S.D.O.

Clinton County

C. E. King et al's No. 1 Vanderau, SE NE SW Sec. 18-55-31w. T.D. 1,044 ft.; S.D.; repairs.

Daviess County

H. H. Francis' No. 1 Louis, SW NW SW Sec. 29-59-27w. Drlg. ahead.

DeKalb County

Geo. W. Moore No. 1 McQuate, NE SW SW Sec. 11-57n-31w. Miss. 1,075 ft.; S.D. csg. 1,500 ft.

Holt County

Brin & Nathan No. 1 Decker, C NW NW Sec. 1-61-38w. S.D. for water.

Jackson County

Hulse & Christopher's No. 1 Wiston, NE NW SE Sec. 22-49-32w. S.D. 510 ft. to D.D.

Knox County

W. H. Oberithier et al's No. 1 Campbell, C NE Sec. 18-61-12w. C.&P.

Mercer County

Geo. W. Moore No. 1 Moss, NW SW SE Sec. 30-65-24w. Hntn. 1,273 ft. Drlg. 1,879 ft.

Platte County

Geo. A. Vincent et al's No. 1 Dillingham, NE SW Sec. 16-53-34w. Pits; M.I.M.
Missouri Valley Gas Co.'s No. 1 Yerrington, C SE NE Sec. 12-51-34w. T.D. 645 ft.; D.&A.

Putnam County

Benedum & Trees' No. 1 Cooley, SE SE NW Sec. 33-64-17w. T.D. 965 ft.; cmtg. to test.

Randolph County

A. A. Ash et al's No. 1 Alexander, C SE Sec. 14-55-13w. Loc.

Ray County

Loomis-Jordan No. 1 Macey, NE SW NW Sec. 10-53-27w. S.O. 330 ft., T.D.; set csg.

Schuyler County

T. E. Baldwin's No. 1-A Johnson, NW NE NE Sec. 21-65-15w. Loc.

St. Charles County

Brooks et al's No. 1 Stewart, SE SE SE Sec. 4-46-2e. S.D.O. 507 ft.

IOWA

Fremont County

Oscar Gruber's No. 1 fee, C SW SE Sec. 8-67n-40w. Base Ft. Scott 750 ft.; T.D. 1,065 ft.; S.D. for csg.

Guthrie County

F. E. Hunt et al's No. 1 McConnell, C SE SE Sec. 11-78n-30w. Drlg. below 65 ft.

NEBRASKA

Cass County

Golden Rod Oil Co. No. 1 Sparer, SE SE SE Sec. 8-11-13e. S.D. 1,200 ft.

Fillmore County

Dan Kornfeld's No. 1 Mathis, NE NE NE Sec. 22-5-1w. C.O. 400 ft.

Keith County

California-Nebraska Oil, Ltd.'s No. 1 Guststuehm, NW NW NW Sec. 21-14-37w. Dak. 2,772 ft.; S.O. 2,895-2,901 ft.; drlg. 2,998 ft.

Richardson County

Pawnee Royalty's No. 1 Boice, CSL N½ NE NE Sec. 18-1-16e. Drlg. 2,400 ft.

Craighead County

Tennark, Inc., No. 1 R. M. Martin, SE cor. NE NE Sec. 35-14-3e. Drlg. sdy. L. 3,-462 ft.; T. sdy. L. 3,458 ft.; reported S.O. 3,924 ft.; drlg. hd. L. 3,945 ft.

Lafayette County

East Texas Ref. Co.'s No. 2-A Patton, 373 ft. S, 652 ft. E, NW cor. NW SE Sec. 24-16-24. S.D. 3,521 ft.; junking hole to skid over and spud.
Standard Oil Co. of La.'s No. 2 H. B. Eddy et al, C SE SE Sec. 12-16-23. Drlg. sh. 6,592 ft.

Lonoke County

Cabot Drlg. Club's No. 1 LeMay, 330 ft. SE cor. SE SW Sec. 26-4n-9w. S.D. 20 ft.

Nevada County

Berry Asphalt Co.'s No. 1 Calloway-Howell, 175 ft. W, 220 ft. S, NE cor. NE SW Sec. 5-14s-20w. Set 7-in. csg. 1,188 ft.; tstg. 1,192 ft.
O. T. Clark's No. 1 T. M. Bemis, 330 ft. NW cor. NW NE Sec. 23-10s-22. M. I.M.

Ouachita County

A. B. Turner et al No. 1 Cook Est., C NW SW Sec. 27-15-18. W.O. 1,618 ft.

Pulaski County

Coker Oil Corp.'s No. 1 Huffman, 330 ft. NW cor. NW SW SW Sec. 29-4n-11w. 8¾-in. csg. 206 ft.; S.D. 1,763 ft.

Sevier County

R. A. McArthur's No. 1 Bell est., 20 ft. SE cor. SE SW Sec. 29-9s-32w. Set 12½-in. csg. 100 ft.; drlg. sh. 238 ft.

Union County—Schuler

Lion Oil Ref. Co.'s No. 7-B Morgan, 330 ft. NW cor. W½ SE Sec. 18-18-17. Drlg. sh. 6,669 ft.

Union County—Other

E. G. Bradham's No. 4-A H. C. McKinney, 306 ft. N, 660 ft. E, SW cor. SW SW Sec. 30-17-15. Hole 120° off; P.B. 2,150 ft.; hole 11° off; abd. and skd. 20 ft. N; set 10-in. csg. 100 ft.; T.D. 2,167 ft.; set 7-in. csg. 2,167 ft.; W.O.C.
Crestrock Oil Co.'s No. 1 E. Riley, 330 ft. S, 250 ft. W, NE cor. NW SW Sec. 9-16-15. S.O. 2,370-80 ft. and 2,-390-2,400 ft.; 6-in. csg. 2,415 ft.; T.D 2,415 ft.; perf. 2,370-74 ft.; pmpd. est. 200 B.P.D.; small S.O.; pmpd. 300 B.F. in 8 hrs., 8% oil; W.O.
Delta Drlg. Co. et al's No. 1 J. E. Bull, 330 ft. SE cor. SW NW Sec. 6-18-13. Tstd. oil and S.W. in Meakin sd. and oil and mud in Graves sd.; tstg. sat. sd. in Blossom; T.D. 2,718 ft.
Delta Drlg. Co.'s No. 1 C. T. Grace, C SE SE Sec. 31-12-14. Set 10¾-in. csg. 815 ft.; cd. sd. S.O. 3,522-42 ft.; D.S.T. 15 min.; ⅝-in. cks.; W.P. 11 lb.; tstd. 2,700 ft. S.W.; cd. S.O. 4,609-29 ft. and 4,629-49 ft.; cg. 6,556 ft.
Lion Oil Ref. Co. No. 9-A Hays, Sec. 4 16-15. O.W.W.O.; O.T.D. 7,255 ft.; P.B 2,325 ft.; rpd. csg. 2,276-80 ft.; S.O.; pmpd. est. 700 B.P.D. S.W.; S.S.O.; arng. recmt. 2,325 ft.; W.O.C.
Oil Prod., Inc.'s No. 1 Moore, C SE SE Sec. 1-17s-14w. S.D. 3,018 ft.

ALABAMA

Barbour County

W. B. Hinton's No. 1 fee, Sec. 14-9n-26e. Cg. 5,310 ft.

Choctaw County

Joe Modisett et al's No. 1 McCorvey, SE cor., SW SW Sec. 20-9n-2w. S.D. 7,-520 ft.

Houston County

Columbia Oil Co.'s No. 1 State Ld., SE cor. NE NE Sec. 8-2n-29e. S.D. 2,150 ft.; Selma clk.

Lawrence County

Mid-Southern Pet. Co.'s No. 1 W. R. Jackson, 150 ft. NL, 500 ft. EL, Sec. 30-7-6. S.D. 570 ft., hd. L.

Washington County

Texon Drlg. Co.'s No. 1 Stallworth Naval Stores, Sec. 25-5n-4w. Spd.; set 12-in. csg. 147 ft.; cg. clk. 4,912 ft.; T. clk. 4,750 ft.

MISSISSIPPI

Attala County

Kosciusko Oil Co.'s No. 1 Jones, 600 ft. NW cor., Sec. 5-15n-9e. Loc.
P. & M. Oil Co.'s No. 1 J. A. McMillin, 300 ft. SW cor., SE SE Sec. 26-13n-5e. Loc.

Claiborne County

Claiborne Co. Dev. Co. No. 1 Ruth Hayden, S½ SE Sec. 55-11n-2e. O.W.WO., O.T.D. 2,949 ft.; S.D. 3,272 ft., sh.

Copiah County

Triangle Drlg. Co.'s No. 1 W. W. Broome, 153 ft. SW cor. SW SE Sec. 1-10n-8e. T.D. 10 ft.; spd.; S.D.; W.O. heavy rig.

Harrison County

Big Ridge Oil Co.'s No. 1 Hengin, C NE Sec. 13-7s-10w. S.D. 2,700 ft.

Hinds County

Love Pet. Co.'s No. 1 Kennington Inv. Co., 82 ft. E. 120 ft. N, SW cor. Lot 19, Kenwood subd. Part 2, Sec. 35-6n-1e. T.D. 2,493 ft.; abd.
Love Pet. Co.'s No. 1 State Blind Inst., Sec. 34-6n-1e. Drlg. sd. 200 ft.
G. Jefferies' No. 1 Gaddis-McLaurin, 150 ft. E, 274 ft. S, NW cor. SW Sec. 17-7n-2w. Drlg. Wilcox sd. 3,406 ft.

Itawamba County

G. C. Grasty et al's No. 1 Ky. Lbr. Co., 1,320 ft. E, 660 ft. S, C Sec. 7-10s-10e. Twisted off D.S., skdd. 24 ft. S and spd.; set 10¾-in. csg. 170 ft.

Issaquena County

A. A. Chaney, Tr.'s No. 1 J. C. Mohanna, Sec. 13-18n-3e. R.U.
Locke & Mellard's No. 1 W. Gary, 660 ft. SE cor., NW Sec. 14-9n-6w. Loc.

Kemper County

M. R. Crabb et al's No. 1 W. T. Caldwell, NW SE Sec. 25-9n-15w. 10¾-in. csg. 86 ft.; T.D. 1,200 ft.; wash. to bttm.

Lafayette County

Adam O. & G. Co. No. 1 Z. E. Lewellen 990 ft. WL, 330 ft. NL, NE NW NW Sec. 9-10s-1w. T.D. 4,167 ft.; abd.

Lamar County

Ira H. Larr et al's No. 1 M. Simmon, Sec. 32-3n-14w. Spd.
South Miss. Pet. Corp.'s No. 1 Pearly Morris, 500 ft. S, 570 ft. E, C Sec. 4-2n-14w. S.D. 3,029 ft.

Pike County

S. R. Crouch's No. 1 Cupit, 360 ft. N, 660 ft. W, SE cor. NE SW Sec. 25-2n-7e. S.D. 864 ft.

Prentiss County

Home Dev. Co.'s No. 1 Mrs. A. Allen, Sec. 8-7s-9e. Drlg. dolo. 1,312 ft.

Simpson County

Cleve Love No. 1 N. E. Gardner, SW cor. SW NE Sec. 1-10n-17w. S.D. 3,150 ft., Wlx.

Wilkinson County

Louisiana Progress Oil Co.'s No. 1 A. M. Young, 792 ft. N, 88° 30' W SE cor., Sec. 40-4n-1e. M.I.M.

Yazoo County

Jones & O'Brien's No. 2 Stevens, C SE NE Sec. 13-10-3. R.U.
Union Producing Co.'s No. 1 Friley, 1,944 ft. W, 678 ft. S NE cor., SE Sec. 14-10-3. R.U.
Union Prod. Co.'s No. 1 Stevens, C NW NW Sec. 13-10n-3w. T. Cretaceous 4,-395 ft.; rec. 4½ ft. shly. L.&sd. with O.S. 4,407-27 ft.; cd. sdy. sh. 4,670-4,770 ft.; Eutaw O. sd. 4,865-77 ft.; D.S.T. 4,860-77 ft. rec. 2,900 ft. oil 11 min.; cg. ahead in sh. 5,043 ft.
Yazoo Refinery, Inc.'s No. 1 Frank Brooks, W½ SE NW Sec. 17-10-2w. R.U.

ARKANSAS

Clark County

Coker Oil Corp.'s No. 1 H. C. and H. H. Cabe, 330 ft. NE cor. NW NE Sec. 3-10-21. Set 5½-in. csg. 244 ft.; reported S.O. 352 ft.; set 4-in. csg. 364 ft.; swbd. fr. wtr.; no S.O.; drlg. 415 ft.
W. S. King's No. 1 H. Ross, 640 ft. S. 359 ft. W, NE cor. S½ SW Sec. 3-10-21. Drlg. 1,668 ft.
W. P. Wilson's No. 1 Hamilton & Mathews, C W½ NE NE Sec. 31-10s-20w. Run 10-in. csg. 41 ft.; T. Nac. 358 ft.; S.S.O.; reported S.O.&G. 437 ft.; S.D. 1,650 ft.

Columbia County

Ark. Fuel Oil Co.'s No. 1-A King, C SE SW Sec. 16-17-20. Drlg. sdy. sh. 7,446 ft.
Ark. Fuel Oil Co.'s No. 1-B King, 1,980 ft. S and E, NW cor. Sec. 21-17-20. Set 9⅝-in. csg. 2,184 ft.; W.O.C.
Atlantic Ref. Co.'s No. 1 Pine Woods Lbr. Co., C SE NW Sec. 16-18-22. Drlg. sh. 873 ft.
Atlantic Ref. Co.'s No. 1-B L. Spain, S½ NW SW Sec. 18-17-19. Drlg. 7,630 ft.; no show.
Lion Oil Ref. Co.'s No. 1 Warnock est., C NW NW Sec. 15-18-22. Set 9⅝-in. csg. 4,125 ft.; W.O.C.
J. K. Mahoney's No. 1 E. Riley, C NW NE Sec. 14-18-19. R.U.
Normandie Oil Co.'s No. 2 Dees, C SE SE Sec. 24-17-20. Set whpstk. 5,300 ft.; O.T.D. 5,738 ft.; P.B. 4,500 ft.; drld. out and set whpstk. 4,636 ft.; set whpstk. 4,678 ft.; drlg. sh. 5,920 ft.
Shell Oil Co., Inc.'s No. 1 Keith, C SE SE Sec. 9-18-22. M.I.M.
Shell Oil Co., Inc.'s No. 2 Merritt, C NW SW Sec. 15-17-20. Drlg. sh. and L. 6,072 ft.
Southwood Oil Co.'s No. 1-C A. L. Poindexter, C N½ SW SE Sec. 23-17-20. Whpstkd. 4,758 ft.; fsg. 7,657 ft.
Standard Oil Co. of La.'s No. 1-B Gunnels, 571 ft. W, 585 ft. S, NE cor. NW SW Sec. 19-17-19. Drlg. sd. and sh. 6,413 ft.
Standard Oil Co. of La.'s No. 1-B Lewis, 660 ft. N, 560 ft. E, SW cor. SW NE Sec. 19-17-19. Drlg. sd. and sh. 276 ft.
Standard Oil Co. of La.'s No. 1-A Longino Unit, C NE SW Sec. 19-17-19. Drlg. 236 ft.
Standard Oil Co. of La.'s No. 1 Oda Jameson et al, 660 ft. N, 664 ft. W, SE cor. Sec. 14-17-19. Drlg. sh. 4,942 ft.
Standard Oil Co. of La.'s No. 1 Petty Stave, C SE SE Sec. 4-17-21. Drlg. sh. and shells 3,710 ft.
Standard Oil Co. of La.'s No. 1 R. S. Warnock, C NW NW Sec. 36-16-20. T.D. 3,295 ft.; arng. run Schlumberger.
Tide Water Seaboard's No. 1 Clark, C SE NE Sec. 16-18-19. Set 10¾-in. csg. 2,-514 ft.; drlg. rd. and gr. sh. 6,180 ft.
G. H. Vaughn and Deep Rock Oil Corp.'s No. 1 J. Jones unit, C SW NE Sec. 21-17-20. Set whpstk. 3,640 ft.; drld. to 4,678 ft.; hole 4° off; abd. loc. and skd. rig to C SW NE and drlg. 6,577

LOUISIANA

N. LOUISIANA WILDCATS

Bossier Parish

Gary & Gibson's No. 1-A Connell, 270 ft. W, 96 ft. S, NE cor. N½ SE SE Sec. 15-19-11. Fsg. 260 ft.
Gulf Ref. Co.'s No. 20 C. B. Hodges, 3,-131 ft. N, 1,388 ft. W, SE cor. Sec. 24-16-12. T. Pett. L. 5,298 ft.; T. Travis Peak 5,590 ft.; drlg. red sdy. sh. 6,378 ft.
Premier Inv. Co.'s No. 7-B Kendrick, 150 ft. N, 1,980 ft. W, SE cor. Sec. 22-19-11. D.S.T. 1,029-42 ft.; S.O.&G.; drlg. sh. and L. 1,410 ft.
J. B. Stovall's No. 8 Ark. Fuel Oil fee, 350 ft. N, 4,400 ft. W, SE cor. NE SE Sec. 15-19-11. Drlg. 380 ft.

Caddo Parish

R. E. Allison's No. 3 Ellerbe et al, 330 ft. N, 1,980 ft. E, SW cor. Sec. 27-18-14. Drlg. L. 4,723 ft.
Ark. La. Gas Co.'s No. 1 Bell, 1,213 ft. N, 1,067 ft. E, SW cor. Sec. 6-17-16. Set 9⅝-in. csg. 3,246 ft.; T. Pettit L. 5,629 ft.; D.S.T. 5,627-77 ft.; rec. 15,-000,000 cu. ft. gas; cg. ahead 5,699 ft.
Burnham Drlg. Co.'s No. 1 Hurdle, 990 ft. N, 300 ft. E, SW cor. SE¼ Sec. 34-22-16. R.U.
Burnham Drlg. Co.'s No. 2 Wilkinson, 1,650 ft. N, 990 ft. W, SE cor. Sec. 33-22-16. Set 10-in. csg. 105 ft.
David Crawford et al's No. 1 Lloyd, 3,-940 ft. N, 1,000 ft. E, SW cor. Sec. 29-17-13. T.D. 1,410 ft.; prep. run 9⅝-in. csg.; blew out in Nac. gas sd. at 900 ft. and caught fire; extinguished; built new drk.; drlg. sh. 4,066 ft.
L. I. Davis' No. 1 Williams, C NW NW Sec. 14-15-15. R.U.; S.D.
R. L. Hall's No. 2 Caddo Lv. Bd., 585

ft. S, 1,245 ft. E, C Sec. 26-21-16. Set 8-in. csg. 938 ft.; T.D. 942 ft.; W.O.S.R.

A. R. Hancock's No. 7 Standard Oil Co. fee, 1,410 ft. E, 1,430 ft. N, C Sec. 18-21-15. Set 6-in. csg. 1,525 ft.; T.D. 1,720 ft.; acd. with 2,000 gal.; tstg.

Jones Oil Co.'s No. 1 Pitts, 250 ft. S, 674 ft. W, NE cor. Sec. 24-20-16. Tstd. dry 1,679 ft., S.O.; acdzd. with 3,000 gal.; W.O.

C. H. Lyons et al's No. 1 Rosenblath, 725 ft. N, 1,270 ft. E, C Sec. 35-18-14. 9-in. csg. 1,221 ft.; drlg. anhy. 4,603 ft.

P. N. McCullough's No. 4 Hart, 673 ft. N, 620 ft. E, SW cor. Sec. 21-21-16. Set 10-in. csg. 60 ft.; W.O.C.

D. R. Manziel's No. 1 Brooks, 338 ft. S, 250 ft. E, NW cor. Sec. 17-21-15. Drlg. sh. 295 ft.

J. F. Mechen's No. 1 Crystal, 990 ft. S, 900 ft. W, NE cor. Sec. 14-21-16. Set 6⅝-in. csg. 1,697 ft.; arng. acd.

J. Ray Murray et al's No. 1 Standard Oil Co. fee, 330 ft. N, 200 ft. E, SW cor. Sec. 12-21-16. Set 7-in. csg. 1,500 ft.; acd. with 1,000 gal. at 1,720 ft.; S.O.; T.D. 2,312 ft.; set 5-in. csg. 2,255 ft.; T.D. 2,312 ft.; pmpg. S.W.; S.O.

G. H. Neighbors' No. 1 Thrash, 1,168 ft. N, 370 ft. E, SW cor. SE¼ Sec. 36-21-16. Tstd. dry; W.O. 1,590 ft.

Claude Nell's No. 1 Vaughn, 115 ft. S, 465 ft. W, NE cor. SW SE Sec. 1-20-16. Drlg. sh. 1,352 ft.

J. S. Pate's No. 1 J. B. Files, 330 ft. N, 332 ft. W, SE cor. Sec. 7-21-15. 6⅝-in. csg. 1,530 ft.; acdzd. with 4,000 gal.; W.O.S.R. 1,753 ft.

Rembert & Morgan's No. 1 E. R. Hudson, 1,008 ft. S, 2,490 ft. W, NE cor. Sec. 11-20-16. Set 6⅝-in. csg. 1,400 ft.; W.O.C.

Riggs & Lester's No. 2-A Seybert, 218 ft. N, 4,242 ft. E, C Sec. 17-20-15. Set 5⅛-in. 1,338 ft.; T.D. 1,640 ft.; W.O.C.

Stanolind O. & G. Co. No. 1, 131 Dillo. hrs., C SE NE Sec. 14-21-15. Ran Schmb. 9,109 ft.; T. Smkvr. L. 8,952 ft.; drlg. shly. L. 9,890 ft.

Joe G. Strahan's No. 2-A Hart, 1,300 ft. N, 990 ft. E, SW cor. Sec. 29-21-16. Set 6-in. csg. 2,300 ft.; W.O.C. 2,381 ft.

Temple Oil Co.'s No. 1 Bostwick, 990 ft. N, 330 ft. W, SE cor. SW Sec. 13-22-16. Drlg. sh. 2,116 ft.

Texas Co.'s No. 10-B Noel, 990 ft. S, 330 ft. W, NE cor. NW¼ Sec. 14-21-15. Set 6⅝-in. csg. 1,502 ft.; W.O.C.

Travis & Red Iron Drlg. Co.'s No. 1 Chandler et al, 819 ft. S, 2,086 ft. E, NW cor. Sec. 5-23-15. Set 9⅝-in. csg. 961 ft.; drlg. sh. and L. 3,227 ft.

Caldwell Parish

Critchett & Woods (formerly E. T Oakes) No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e. Drlg. ch. rk. 4,740 ft.

Claiborne Parish

Lisbon Explin. Co. No. 1 Roberta Vaughn, 330 ft. N, 660 ft. E, SW cor NW NE Sec. 36-21-5. O.W.D.D.; O.T.D 5,313 ft.; recmtd. 7-in. csg. 5,343 ft.; T. Tr. Pk. 5,405 ft.; T. lower Marine form. 7,833 ft.; cd. 8,360-78 ft.; max. of 3½ ft. of por. gas sd.; cg. oil sd. 8,838 ft.

De Soto Parish

N. W. Hunter's No. 1 Anders-LeBlanc, C NW SE Sec. 5-11-14. Set 10-in. csg. 590 ft.; T.D. 1,321 ft.; S.D.; wtr.

Murray Davis' No. 1 Russell, 50 ft. N, 500 ft. W, SE cor. NE NW Sec. 12-11-16. D.S.T. 2,725-36 ft.; rec. 1,000 ft. S.W. in 33 min.; W.O.; T.D. 2,736 ft.

C. H. Tuttle No. 2-A Wemple, E NW cor. SW¼ Sec. 14-12n-11w. T. bkn. sd 2,640 ft.; 6⅝-in. csg. 2,557 ft.; tstg. 2,698 ft.

Franklin Parish

Continental Oil Co.'s No. 1 J. T. Carroll et al, 330 ft. NW cor. Sec. 26-13-8e. Drlg. sh. 2,816 ft.

La Salle Parish

Smith Bros.' No. 1 Kenney, 660 ft. S 150 ft. W, C Sec. 7-10-2e. T. sd. 1,517 ft.; set 8¼-in. csg. 1,517 ft.; T.D. 1,527 ft.; tstg. 1,527 ft.

Morehouse Parish

Union Prod. Co. No. 1-A Tensas-Delta. 1,894 ft. W, 1,584 ft. S, NE cor. SE Sec. 8-22-4. Set 20-in. csg. 125 ft.; 16-in. csg. 712 ft.; set 10¾-in. csg. 2,448 ft. D.S.T. 7,682-7,758 ft.; tstd. drlg. mud; drlg. sdy. L. 7,896 ft.

Natchitoches Parish

Jack Lent et al's No. 1 Walker, C NE NE Sec. 9-10-10. 10-in. csg. 63 ft.; drlg. ch. rk. 1,814 ft.

Popkins & DeSoto Bros.' No. 1 Peavy-Wilson Lbr. Co., 330 ft. NW cor. SE NW Sec. 36-7n-9w. O.W.W.O.; O.T.D 500 ft.; S.D. 2,700 ft.

Sabine Parish

Ed Bailey's No. 1 Hale, 330 ft. NW cor. NE NW Sec. 6-7-12. S.D. for wtr. 1,228 ft.

A. R. Chestnut et al's No. 1 Sepulvedo, 990 ft. N, 330 ft. E, SW cor. Sec. 4-7-13. Drlg. sh. 1,727 ft.

M. Lanza's No. 1 Phares, 330 ft. SE cor. NE SE Sec. 5-5-12. Drlg. sd. 1,910 ft.

W. E. Manners' No. 1 Stephens, C SW SE Sec. 17-9-11. R.U.

Oglesby & Baird's No. 1 Sabine Lbr. Co., SW cor. SW SE Sec. 5-7-13. T. clk. 2,140 ft.; rng. csg.; T.D. 2,140 ft.

E. R. Phillips' No. 1 Craig, 335 ft. S, 330 ft. E, NW cor. NW SE Sec. 22-9-13. D.D.; arng. test; T.D. 1,935 ft.

W. L. Posey No. 1 Rivers, C NW NW Sec. 26-8-13. 6-in. csg. 2,147 ft.; T.D. 2,150 ft.; T. clk. 2,145 ft.; S.D. for wtr. 2,410 ft.

W. M. Quick No. 1 Sabine, SE cor. NE SE Sec. 8-7-13. 6-in. csg. 2,061 ft.; T. D. 3,547 ft.; P.B. 2,350 ft.; tstg. small S.O.&wtr.

H. M. Sneed No. 1 Leone, SW cor. NW SE Sec. 8-7-13. T.D. 1,962 ft.; 6-in. csg. 2,061 ft.; W.O.S.R.; T.D. 2,116 ft.

S. E. Stack's No. 1 Gray, 330 ft. SW cor. Sec. 4-7-13. T. clk. 2,025 ft.; set 7-in. csg. 2,028 ft.; W.O. wtr.

J. E. Stack's No. 1 Weber, 330 ft. SE cor. SW NE Sec. 8-7-13. R.U.; S.D.

Sutton-Zwolle Oil Co.'s No. 3 Sabine, 1,650 ft. S, 660 ft. E, NW cor. NE Sec. 23-7-14. S.D.

Union Parish

W. E. Hope O. & G. Co.'s No. 6 Frost Lbr. Ind., Sec. 26-22-3. Set 8-in. csg. 757 ft.; W.O.C.

Memphis Nat. Gas Co.'s No. 1 Day, 951 ft. S, 277 ft. E, NW cor. Sec. 24-22-3e. R.U.

Memphis Nat. Gas Co.'s No. 2 Frost Lbr. Ind., Sec. 22-22-3e. 12½-in. csg. 176 ft.; W.O.C.

Southern Carbon Co.'s No. 33 Grayling, Sec. 30-22-4e. Drlg. sh. 1,888 ft.

H. L. Woods' No. 1 Frost Lbr. Ind., 1,980 ft. E, 660 ft. N, SW cor. Sec. 29-21-3. Set 6-in. csg. 2,081 ft.; W.O.C.

H. L. Woods' No. 1 Union Power, 1,980 ft. E, 660 ft. S, NW cor. Sec. 29-21-3. R.U.

Webster Parish

Hunt Oil Co.'s No. 3 Stewart, C NE NW Sec. 29-21-10. R.U.

Magnolia Pet. Co.'s No. 3 Cox, 672 ft W, 737 ft. N, SE cor. SE NE Sec. 22-21-10. Drlg. anhy. and sh. 4,605 ft.

Midstates Oil Corp.'s No. 1 W. L. Coyle, 100 ft. NW, C NE SE Sec. 20-21-10. D. sd. 8,526-46 ft. (oil); Set 7-in. csg. 8,708 ft.; T.D. 8,711 ft.; perf. csg. in "D" sd.

Oliphant Oil Co.'s No. 2 Banks, 410 ft. S, 660 ft. E, NW cor. Sec. 2-20-10. Set 9⅝-in. csg. 5,611 ft.; drlg. 6,289 ft.

Stanolind O. & G. Co.'s No. 4 Pardee, 660 ft. SE cor. Sec. 25-21-10. T. Tr. Pk. 5,829 ft.; 9⅝-in. csg. 5,950 ft.; drlg. 5,829 ft.; 9⅝-in. csg. 5,950 ft.; 9⅝-in. csg. 5,863 ft.; hole off 4°, whpstk. 6,989 ft.; drlg. sd. and sh. 7,052 ft.

Woodley Pet. Co.'s No. 2 Couch, 810 ft. S, 510 ft. W, NE cor. SW Sec. 35-21-10. 13⅜-in. csg. 683 ft.; set 9⅝-in. csg. 5,775 ft.; drlg. sdy. sh. 6,385 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 3 Brookshire. Sec. 66-12s-3e. T.D. 7,896 ft.; 6-in. csg. 7,896 ft.; perf. csg. 7,886-80 ft.; tstg.

Continental Oil Co. No. 1 David Meaux, Sec. 9-12s-3e. T.D. 11,359 ft.; T. gas sd. 11,318 ft.; D.S. stk.; fsg.

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drlg.

Stanolind O. & G. Co.'s No. 1 Lebocut, Sec. 33-12s-3e. Drlg. sh. 3,230 ft.

Bancroft—Beauregard Parish

Republic Prod. Co.'s No. 9 Columbia Ld. & Tmbr. Co., Sec. 15-6s-13w. T.D. 7,330 ft.

Republic Prod. Co.'s No. 11 Columbia Ld. & Tmbr. Co., Sec. 16-16s-13w. T.D. 7,321 ft.; 5½-in. csg. 7,316 ft.; I. P. 12 B.P.D.; ⅛-in. ck.

Republic Prod. Co.'s No. 1 G. T. Whitman, Sec. 15-6s-13w. Drlg. sh. 3,612 ft.

Republic Prod. Co.'s No. 3 L. Whitman, Sec. 15-6s-13w. T.D. 7,662 ft.; 5½-in. csg. 7,662 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Sch. Bd., Sec. 16-16s-12e. Gas sd. 11,169-79 ft.; drlg. sh. 11,375 ft.

Texas Co.'s No. 3 Way Bayou, Sec. 21 16s-12e. Loc.

Baton Rouge—East Baton Rouge Parish

W. V. Bowles' No. 2 Richard Community, Sec. 45-7s-1e. T.D. 6,522 ft.; 5½-in. csg. 6,522 ft.; perf. csg. 6,500-15 ft.; tstd. S.W.

M. T. Grubb et al's No. 2 College Town Sec., Lot 18, Blk. 2. T.D. 6,493 ft.; 7-in. csg. 6,484 ft.; I.P. 331 B.P.D.; ⅛-in. ck.

Guaranty Oil Co. No. 2 Morgan, Sec. 65-7s-1w. T.D. 6,530 ft.; 5½-in. csg. 6,450 ft.; swbd. S.W.; S.D.

Wm. Helis' No. 3-B Duplantier, Sec. 68-7s-1w. T.D. 6,500 ft.; 7-in. csg. 6,478 ft.

Wm. Helis' No. 1 L.S.U., Sec. 67-7s-1w. Drlg. sh.&L. 5,716 ft.

Wm. Helis' No. 4 Materiste, Sec. 66-7s-1w. T.D. 6,572 ft.; T. sd. 6,460 ft.

T. G. Markley et al No. 3 Knox. Amis-Farnbacher, Sec. 66-7s-1w. T.D. 6,478 ft.; run 7-in. csg.

Marshland Oil Co.'s No. 1 J. B. McDonald, Sec. 45-7s-1e. T. sd. 6,477 ft.; T.D. 6,488 ft.

Sugarfield Oil Co.'s No. 2 Irby Nichols. Sec. 45-7s-1e. T.D. 4,390 ft.; 5½-in. csg. 4,390 ft.; perf. csg. 4,345-67 ft.; tstd. dry gas.

Texas Canadian Oil Co.'s No. 2 Bogan-Davidson, Sec. 67-7s-1w. 6-in. csg. 18 ft.; S.D.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 19 State-Bay St. Elaine. Sec. 18-22s-18e. T.D. 6,500 ft.; 9⅝-in. csg. 6,400 ft.; T.D. 7,028 ft.; 7-in. csg. 7,028 ft.; perf. csg. 6,440-6,500 ft. tbg. plugged; drlg. out cmt. 6,537 ft.

Bayou des Glaise—Iberville Parish

Humble O. & R. Co. No. 1-B Wilbert, Sec. 78-8s-8e. T.D. 3,025 ft.; 13⅜-in. csg. 3,000 ft.; T. salt 4,101 ft.; T.D. 4,182 ft.; S.D.

Humble O. & R. Co.'s No. 2-B Wilberts, Sec. 78-8s-8e. Loc.

Black Bayou—Cameron Parish

Earth Pet. Co. No. 2 R. A. Moore, Sec. 18-12s-12w. S.D. 8,332 ft.; abd.

Caillou Island—Terrebonne Parish

Wm. Helis' No. 5 L.S.U., Sec. 67-7s-1w.

Texas Co.'s No. 12 State, Sec. 20-23s-20e. T.D. 4,982 ft.; fsg.

Texas Co.'s No. 61 State, Sec. 17-23s-20e. T.D. 4,309 ft.; 7-in. csg. on bttm.

Cameron Meadows—Cameron

Magnolia Pet. Co. No. 25 Cameron Meadows, Sec. 21-14s-13e. T.D. 6,955 ft.; 7-in. csg. 6,494 ft.; perf. csg. 6,447-51 ft.; P.B. 6,464 ft.; I.P. 240 B.P.D.; ¼-in. ck.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 1 Cypress, Sec. 75-15s-15e. 13⅜-in. csg. 1,842 ft.; T. salt 6,072 ft.; T.D. 6,088 ft.; P.B. 2,100 ft.; sdtrkd.; T.D. 6,553 ft.; fsg.; sdtrkd.; drlg. sh. 4,599 ft.

Sun Oil Co.'s No. 6 Dibert, Stark & Brown, Sec. 70-15s-15e. Loc.

Sun Oil Co. No. 2 Dodge Sunberry, Sec. 65-15s-15e. S.D. 4,259 ft.; T.A.

Chalkley Field—Cameron Parish

Humble O. & R. Co.'s No. 1 Cameron Sch. Bd., Sec. 16-12s-6w. Loc.

Humble O. & R. Co.'s No. 5 K. B. Hanzen, Sec. 9-12s-6w. Drlg.

Humble O. & R. Co.'s No. 5 Sweet Lake Ld. & Oil Co., Sec. 7-12s-6w. Drlg. 4,630 ft.

Shell Oil Co., Inc.'s No. 4 Hanzen. Drlg. sh. 7,000 ft.

Charenton—St. Mary Parish

Pan American Prod. Co.'s No. 3-A H. Ecuer, Sec. 11-13s-9e. Drk.

Pan American Prod. Co.'s No. 17 Laws Realty Co., Sec. 31-13s-10e. Drlg. sh. 1,842 ft.

Pan American Prod. Co.'s No. 6 South Coast Corp., Sec. 31-13s-10e. Drlg. sh. 3,030 ft.

Cheneyville—Rapides Parish

Amerada Pet. Corp.'s No. 6 Well, Sec. 54-1s-2e. T.D. 5,842 ft.; 5½-in. csg. 5,809 ft.; perf. csg. 5,665-5,720 ft. and 5,730-51 ft.; I.P. 271 B.P.D.; ⅛-in. ck.

Gulf Oil Corp.'s No. 2 M. Pope, Sec. 56-1s-2e. Drlg. sh.&sd. 2,930 ft.

S. W. Richardson's No. 4 Well, Sec. 54-1s-2e. Cg. sh. 5,720 ft.

Creole—Cameron Parish

Superior Oil Co.'s No. 9 State, Gulf of Mexico, Twp. 15s-8w. Drlg. 2,630 ft.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 25 Community, Sec. 31-10s-2e. Drlg. sdy. sh. 1,116 ft.

Humble O. & R. Co.'s No. 16 Gumbel, Sec. 36-10s-2e. S.O. 8,205-55 ft.; T.D. 8,445 ft.; 7-in. csg. 8,374 ft.; perf. csg. 8,259-61 ft.; I.P. 682 B.P.D.; ¼-in. ck.

Kiva Oil Co. No. 1 Duplessis, Sec. 60-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 23 State, Sec. 5-22s-16e. T.D. 7,429 ft.; P.B.; sdtrkd.; T.D. 6,105 ft.; P.B.; sdtrkd.; drlg. sdy. sh. 6,562 ft.

Eola—Avoyelles Parish

Amerada Pet. Corp.'s No. 3 Glaze, Sec. 6-2s-3e. Drlg. sh. 7,320 ft.

Amerada Pet. Corp.'s No. 3 Irion, Sec. 6-2s-3e. R.U.

Amerada Pet. Corp.'s No. 5 C. B. Marchive, Sec. 6-2s-3e. T.D. 8,530 ft.; 5½-in. csg. 8,529 ft.; perf. csg. 8,404-8,505 ft.; I.P. 747 B.P.D.; ¼-in. ck.

Amerada Pet. Corp.'s No. 6 Marchive, Sec. 6-2s-3e. T.D. 8,556 ft.; 5½-in. csg. 8,555 ft.

Amerada Pet. Corp.'s No. 1 White et al, Sec. 7-2s-3e. R.U.

Gulf Explin. Co. No. 5 Samuel Haas Est., Sec. 8-2s-3e. T.D. 8,584 ft.; 5½-in. csg. 8,564 ft.; perf. csg. 8,565-70 ft.; flwd. oil; went dead; perf. csg. 8,569-82 ft. abd.

Geo. Lilly et al No. 1 Dent, Sec. 1-2s-2e. T.D. 8,579 ft.; 5½-in. csg. 8,576 ft.; perf. csg. 8,516-75 ft.

Sid Richardson No. 3 State-Bayou Boeuf. Sec. 6-2s-3e. T.D. 8,575 ft.; 5½-in. csg. 8,574 ft.

S. W. Richardson's No. 1-A Haas, Sec. 11-2s-2e. R.U.

S. W. Richardson's No. 6 Haas Inv. Co. Sec. 7-2s-3e. T.D. 8,579 ft.; 5½-in. csg. 8,579 ft.; I.P. 363 B.P.D.; ⅛-in. ck.

Fausse Point—Iberia Parish

Texas Co.'s No. 6 State, Twp. 11s-8e. 13⅜-in. csg. 1,407 ft.; drlg. 4,020 ft.

Garden Island—Plaquemines Parish

Texas Co.'s No. 37 State, Garden Island, Sec. 38-23s-33e. Drlg. sh. 5,795 ft.

Texas Co.'s No. 39 State, Sec. 38-23s-33e. Drlg. sh. 65 ft.

Golden Meadows—La Fourche Parish

Acadian Prod. Co.'s No. 1 Dr. L. P. LeBlanc, Sec. 2-19s-22e. Drlg. sh. 1,500 ft.

Bennett Oil Co.'s No. 3 Cheramie, Sec. 12-19s-22e. R.U.

Berkshire Oil Co.'s No. 7 Nicol, Sec. 9-19s-22e. Drlg. sh. 1,573 ft.

Boller & Rutledge's No. 1 Burger Cheramie, Sec. 12-19s-22e. 10¾-in. csg. 803 ft.

Brown & Woods' No. 1 S. Hogan, Sec. 9-19s-22e. T.D. 2,710 ft.; P.B. to 1,500 ft.

Peter Cloban's No. 1 Nat Alario, Sec. 2-19s-22e. R.U.

Golden Meadows Oil Co.'s No. 1 Whitney Rebstock, Sec. 2-19s-22e. Drk.

Wm. Helis' No. 2 Gaspard & Regan, Sec. 9-19s-22e. T.D. 900 ft.; P.B. 600 ft.; to sdtrk.; T.D. 2,772 ft.; P.B. 2,440 ft.; abd.

M. H. Marr and R. A. Bristol No. 1 Church property, Sec. 2-19s-22e. T.D. 7,724 ft. sdtrkd.; T.D. 9,007 ft.; P.B. and sdtrkd.; T.D. 2,652 ft.; T. sd. 2,647 ft.; 7-in. csg. 2,647 ft.; tstd. S.W. and oil; P.B. 2,000 ft.; sdtrkd.; T.D. 2,666 ft.; T.S. 2,648 ft.; flwd. oil and S.W.; perf. csg. 2,647-64 ft.; flwd. gas and S.W.; went dead; T.A.

Martex Oil Co.'s No. 1 Rebstock, Sec. 2-19s-22e. Loc.

M. H. Marr & Vaughn's No. 2 Adam Terrebonne, Sec. 9-19s-22e. Drlg. clay 21 ft.

S. Rhodes Drlg. Co.'s No. 1 Falgout Holding Co., Sec. 12-19s-22e. Drlg. sh. 2,026 ft.

S. Rhodes Drlg. Co.'s No. 2 Falgout Holding Co., Sec. 9-19s-22e. R.U.

St. Mary Oil Co.'s No. 1 Choust, Sec. 12-19s-22e. T.D. 5,561 ft.; 5½-in. csg. 5,544 ft.; perf. csg. 5,174-85 ft.; I.P. 233 B.P.D.; ⅛-in. ck.

St. Mary Oil Co.'s No. 2 Choust, Sec. 12-19s-22e. T.D. 5,282 ft.; P.B. 5,208 ft.; perf. csg. 5,178-94 ft.; would not flw. reperf. csg. 5,180-90 ft.; I.P. 300 B.P.D.; 7/64-in. ck.

St. Mary Oil Co.'s No. 1 Williams, Sec. 12-19s-22e. Drlg. sdy. sh. 1,750 ft.

Terouche Oil Co.'s No. 2 Cheramie, Sec. 12-19s-22e. Drk.

Texas Co.'s No. 2 Falgout Holding Co., Sec. 9-19s-22e. T.D. 7,952 ft.; 7-in. csg. 7,912 ft.; I.P. 840 B.P.D.; ¼-in. ck.

Texas Co.'s No. 3 Falgout Holding Co., Sec. 9-19s-22e. T.D. 2,670 ft.; 7-in. csg. 2,645 ft.; I.P. 309 B.P.D.; ⅛-in. ck.

Texas Co.'s No. 4 Falgout Holding Co., Sec. 9-19s-22e. Loc.

Texas Co.'s No. 5 Falgout Holding Co., Sec. 9-19s-22e. R.U.

Texas Co.'s No. 4 L.L.&E., Golden Meadows, Sec. 78-19s-22e. Drlg. sd. 1,185 ft.

Texas Co.'s No. 5 L.L.&E., Golden Meadows, Sec. 78-19s-21e. T.D. 7,949 ft.; 7-in. csg. 7,921 ft.; I.P. 577 B.P.D.; ⅛ in. ck.

Texas Co.'s No. 6 L.L.&E.-Golden Meadows, Sec. 78-19s-21e. 10¾-in. csg. 573 ft.

Texas Co. No. 3 State-Catfish Lake, Sec. 76-19s-21e. T.D. 3,509 ft.; 7-in. csg. 2,805 ft.; perf. csg. 2,740-62 ft.; W.O. S.R.

Texas Co. No. 1 Theriot, Sec. 12-19s-21e. T.D. 10,100 ft.; 7-in. csg. on bttm.; perf. csg. 7,190-7,210 ft.; tstd. S.W.; perf. csg. 6,602-07 ft.; tstg.

Grand Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 5-A Grand Prairie, Sec. 31-19s-19e. Drlg. sd. 7,298 ft.

Gulf Oil Corp. No. 6-A Grand Prairie Lv. Dist., Sec. 17-20s-10e. Drlg. sh. 9,550 ft.

Gulf Oil Corp.'s No. 7-A Grand Prairie Lv. Dist., Sec. 5-20s-19e. Loc.

Gulf Oil Corp.'s No. 8-A Grand Prairie Dist., Sec. 5-20s-19e. Loc.

Gulf Oil Corp.'s No. 4 State, Sec. 20-19s-19e. Loc.

Texas Co. No. 1 State-Lookout Pass, Sec. 48-20s-18e. Loc.

Grand Lake—Cameron Parish

Superior Oil Co.'s No. 4 Grand Lake, Twp. 13s-4w. Loc.

Hackberry—Cameron Parish

Gulf Oil Corp. No. 25-A Erwin, Sec. 13-12s-10w. Drk.

Stanolind O. & G. Co.'s No. 20 Cameron Par. Sch. Ld., Sec. 16-12s-10w. R.U.

Superior Oil Co.'s No. 7 Benson Vincent, Sec. 30-12s-10w. R.U.

Texas Co. No. 27-B State, 623 ft. S, and 5,142 ft. E of SE cor. Sec. 12-12s-10e. in Twp. 12s-9w. T.D. 7,843 ft., salt; T. salt 7,839 ft.; P.B. 6,500 ft.; sdtkd.; drlg. sh. 6,923 ft.

Union Sulphur Co.'s No. 1 Simon Doiron, Sec. 37-12s-10w. Drlg. sh. 4,120 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co.'s No. 3 State, Sec. 40-17s-9e. Drlg. sh.&L. 10,830 ft.

Jeanerette—St. Mary Parish

Herton Oil Co.'s No. 6 Roane, Sec. 38-13s-9e. Drlg. sh. 7,310 ft.

Jefferson Island—Iberia Parish

Texas Co.'s No. 3 Jefferson Salt Mining Co., Sec. 58-12s-5e. Drlg. sh. 6,812 ft.

Jennings—Acadia Parish

Carter-Perrin & Brian No. 1 Martel, Sec. 47-9s-2w. T.D. 1,916 ft.; 6-in. csg. 1,862 ft.; T.A.

Glassell-Glassell No. 8 Trusher, Sec. 42-9s-2w. Drlg. sdy. sh. 4,020 ft.

Shell Oil Co., Inc.'s No. 8 Community. Drlg. sh. 3,051 ft.

Stanolind O. & G. Co. No. 115 Crowley Oil & Min. Co., Sec. 48-9s-2w. Drlg. sd.&L. 6,310 ft.

Lafitte—Jefferson Parish

Texas Co. No. 14 Lafitte, Sec. 20-17s-24e. T.D. 4,599 ft.; P.B. 3,404 ft.; sdtrkd.

Texas Co.'s No. 4 Marrero, Sec. 21-17s-24e. Drlg. sh. 5,955 ft.

Lake Long—La Fourche Parish

Fohs Oil Co.'s No. 11 State, Twp. 17s-19e. 10¾-in. csg. 2,034 ft.

Lake Mongoulois—St. Martin Parish

Texas Co. No. 7 State, Sec. 10-10s-9e 7⅝-in. csg. 10,604 ft.; T.D. 10,775 ft.; perf. csg. 10,220-40 ft.; testd. gas; sqzd. perf.; perf. csg. 9,739-49 ft.; tstd. 3,000 lb. W.P.; perf. csg. 9,570-85 ft.; tstd. S.W.; perf. csg. 9,502-20 ft.; tstd. dry gas; perf. csg. 8,909-48 ft.; tstd. S.W.

Lake Pelto—Terrebonne Parish

Texas Co.'s No. 28 State, Sec. 7-23s-18e. Drlg. sh. 3,832 ft.

La Pice—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Lebermuth & Israel. Drlg. sh. 7,482 ft.
Shell Oil Co., Inc.'s No. 2 Natalbany Lbr. Co., Sec. 19-9s-2e. Cg. sh. 8,588 ft.

Leeville—Plaquemines Parish

Texas Co.'s No. 72 L.L.&E., Sec. 27-21s-22e. T.D. 5,041 ft.; sdtrkd.; drlg. sdy. sh. 6,558 ft.

New Iberia—Iberia Parish

Wm. Helis' No. 7 Sabatier, Sec. 54-12s-7e. T.D. 2,217 ft.; run 7-in. csg.
Wm. Helis No. 7 J. E. Schwing sec. 87 12s-7e. T.D. 8,850 ft.; P.B. 7,840 ft.; drlg. 7,906 ft.
J. J. Hooper's No. 1 Marston, Sec. 51-12s-7e. Drlg. 1,300 ft.
Texas Co. No. 2 Bryant, Sec. 25-12s-7e R.U.
Texas Co.'s No. 11 J. P. Duhe, Sec. 26-12s-7e. T. salt 3,412 ft.; T.D. 3,415 ft.; P.B. 2,500 ft.; sdtrkd.; T.D. 3,777 ft.; 7-in. csg. 3,729 ft.; W.O.S.R.
Texas Co.'s No. 12 Duhe, Sec. 26-12s-7e. Drlg. 260 ft.
Texas Co.'s No. 1 Polk Hebert, Sec. 25-12s-7e. Bldg. rd.
Texas Co.'s No. 3 Schwing, Sec. 71-12s-7e. Drlg. sh. 5,712 ft.
Texas Co.'s No. 1 H. Perry Walet, Sec. 2-12s-7e. Drk.

North Crowley—Acadia Parish

Humble O. & R. Co.'s No. 6 Williams, Sec. 33-8s-1e. T.D. 7,199 ft.; 7-in. csg. 7,195 ft.

North Elton—Allen Parish

Stanolind O. & G. Co.'s No. 1 G. W. Jenkins, Sec. 23-6s-3w. Drlg. sh. 1,600 ft.

Paradis—St. Charles Parish

Texas Co. No. 2 L.L.&E. Paradis, Sec. 6-14s-20e. Cd. sd., dist. odor 10,085-89 ft.; T.D. 10,497 ft.; 7-in. csg. 10,497 ft.

Port Barre—St. Landry Parish

Gulf Oil Corp.'s No. 15 Wilson & Cochran, Sec. 4-6s-5e. T.D. 4,781 ft.; P.B.; sdtrkd. 4,100 ft.; T.D. 5,116 ft.; 5-in. csg. 5,116 ft. perf. csg. 5,106-16 ft.; I.P. 211 B.P.D.; ⅛-in. ck.
Pan American Prod. Co.'s No. 4 Cormier, Sec. 4-6s-5e. T.D. 5,425 ft.; perf. csg. 4,959-65 ft.; tstd. S.W.; drlg. sh. 4,249 ft. in sdtrkd. hole.
Pan American Prod. Co. No. 8 Cormier Sec. 4-6s-5e. Bld. loc.
Pan American Prod. Co.'s No. 5 Garland, Sec. 4-6s-5e. R.U.
V. D. Spill No. 1 Gaudet, Sec. 4-6s-5e S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 40 Orleans Lv. Bd., Sec. 13-18s-15e. Drlg. sh. 5,241 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 3-A Plaquemines Ld. Co., Sec. 7-19s-17e. Drlg. sdy. sh. 4,949 ft.
Gulf Oil Corp. No. 9 State QQ, Sec. 18-19s-17e. Loc.
Gulf Oil Corp.'s No. 15 State, Twp. 19s-17e. Drlg. sh.&L. 7,270 ft.

Sorrento—Ascension Parish

Sorrento Synd. No. 1 L. L. Bernard Sec. 27-10s-4e. Drlg. sh. 7,162 ft.

South Houma—Terrebonne Parish

Shell Oil Co., Inc.'s No. 4 Peters, Sec. 72-18s-18e. Drlg. sh.&L. 7,687 ft.

Valentine—La Fourche Parish

Wm. Helis' No. 5 Valentine Sugars, Inc., Sec. 2-17s-20e. 10¾-in. csg. 1,632 ft.; T.D. 7,845 ft.; P.B. 6,965 ft.
Pan American Prod. Co.'s No. 3-A Community, Sec. 10-17s-20e. Drlg. sh. 7,508 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co.'s No. 6 Buras Lv. Bd., Sec. 27-21s-30e. Drlg. sh. 9,684 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 2 Corell, Sec. 36-3s-2e. T.D. 10,360 ft.; 6-in. csg. 10,360 ft.; perf. csg. 8,980-90 ft.; tstd. mud and S.W.
Continental Oil Co.'s No. 4 A. M. Fontenot, Sec. 46-3s-2e. Drlg. sh. 6,410 ft.
Continental Oil Co.'s No. 5 Fontenot, Sec. 26-3s-2e. Drlg. sh. 6,920 ft.
Continental Oil Co.'s No. 6 Ludeau Haas Sec. 45-3s-2e. T.D. 9,093 ft.; perf. csg. 8,954-68 ft.; I.P. 156 B.P.D.; ¼-in. ck.
Continental Oil Co.'s No. 5 Opelousas, St. Landry, Sec. 44-3s-2e. T.D. 7,903 ft.; fsg.
Continental Oil Co.'s No. 1 Phillip Fontenot, Sec. 44-3s-2e. R.U.
Continental Oil Co.'s No. 4 Pitre, Sec. 44-3s-2e. R.U.
Continental Oil Co.'s No. 1 J. E. Vidrine, Sec. 41-4s-2e. Drlg. sh. 5,110 ft.
J. K. Hughes' No. 1 J. E. Ortego, Sec. 36-3s-2e. Drlg. sh.&L. 9,437 ft.

West Gueydan—Vermilion Parish

Magnolia Pet. Co.'s No. 2 A. Cormier, Sec. 5-12s-2w. T.D. 7,256 ft.; 7-in. csg. 7,256 ft.; perf. csg. 7,148-52 ft.; tstg.

West Lake Verret—St. Mary Parish

Shell Oil Co., Inc., No. 1 Michel, Sec. 1-14s-12e. T.D. 11,522 ft.; run Teophone sur.

White Castle—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Baist. Drlg. sh. 5,748 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 Raymond Hebert, Sec. 6-9s-5w. T.D. 9,575 ft.; 7-in. csg. 9,575 ft.; perf. csg. 9,480-84 ft.; I.P. 69 bbl. dist. plus 78% S.W.; ¼-in. ck.
Union Sulphur Co.'s No. 1 E. A. Norton, Sec. 12-9s-5w. R.U.
Union Sulphur Co. No. 3 Mrs. O'Miller, Sec. 7-9s-5w. Drlg. sh. 4,815 ft.
Woodlawn Oil Corp.'s No. 1 Hebert, Sec. 1-9s-6w. R.U.

S. LOUISIANA WILDCATS

Acadia Parish

Mareaux Oil Corp. No. 2 J. E. Settig, Sec. 17-7s-1w. T.D. 1,324 ft.; abd.
Providence Oil Co.'s No. 1 Jos. John est., Sec. 37-10s-1e. T.D. 8,277 ft.; abd.
Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. M.I. rig.

Allen Parish

Bel Oil Co. No. 2 J. A. Bell Est. (Blue Springs). Drk.

Assumption Parish

Shell Oil Co., Inc.'s No. 1 C. S. Eellis. Sec. 9-16s-14e. Drlg. sh. 1,972 ft.

Beauregard Parish

Atlantic Ref. Co. No. 1 Lutcher Moore, Sec. 22-3s-11w. Loc.
Atlantic Ref. Co. No. 1 Rice Ld. & Lbr. Co., Sec. 22-3s-11w. Loc.
California Co.'s No. 2 Long Bell Lbr. Co., Sec. 12-5s-10w. Drlg. sh. 7,010 ft.
Republic Prod. Co.'s No. 9 Lutcher Moore Lbr. Co., Sec. 1-7s-12w. Drlg. sh. 2,100 ft.

Calcasieu Parish

C. L. Arnette's No. 1 Arthur Welch, Sec. 19-10s-12w. 10¾-in. csg. 130 ft.; T.D. 395 ft.; S.D.
Gulf Oil Corp.'s No. 1 Amanda Brannon, Sec. 16-11s-10w. Drlg. sd.&sh. 7,944 ft.

Cameron Parish

Humble O. & R. Co.'s No. 1 fee, Sec. 7-15s-14w. Drlg. sh. 3,913 ft.
Phillips Pet. Co.'s No. 1 Miami Corp., Sec. 11-14s-6w. Bldg. rd.

East Baton Rouge Parish

Farris & Golding Drlg. Co.'s No. 1 D. E. McEnnis, Sec. 58-7s-1e. 20-in. csg. 42 ft.; 10¾-in. csg. 1,747 ft.

Iberia Parish

Plymouth Oil Co. et al's No. 1 Lynch McHugh, Sec. 13-12s-10e. R.U.

Jefferson Parish

California Co. No. 1 Adam Rutley, Sec. 2-16s-23e. 20-in. csg. 163 ft.; 13⅜-in. csg. 1,980 ft.; 9⅝-in. csg. 8,496 ft.; drlg. sh. 12,217 ft.
Continental Oil Co. No. 1 Bernstein, Sec. 2-16s-23e. Drlg. sh. 9,180 ft.

Jeff Davis Parish

Housh & Thompson's No. 1 Lacassine, Sec. 29-11s-5w. Drlg. sh. 6,915 ft.

Lafayette Parish

Stanolind O. & G. Co.'s No. 1 Lacaze Billeaud et al, Sec. 35-10s-5e. Drlg. sh. 7,000 ft.

La Fourche Parish

Gulf Oil Corp. No. 2 Grandison, Sec. 21-20-23e. 13⅜-in. csg. 2,090 ft.; drlg. sh. 11,003 ft.
Tide Water Asso. Oil Co. No. 1 Delta Farms, Inc., Sec. 6-17s-23e. Drlg. sh 8,699 ft.

Livingston Parish

Humble O. & R. Co.'s No. 1 Great Southern Lbr. Co., Sec. 27-7s-5e. T.D. 9,324 ft.

Orleans Parish

W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 10,394 ft.; 5½-in. csg. 10,274 ft.; S.D.

St. Bernard Parish

Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,658 ft.; lost core bbl.; P.B. sdtrkd. 8,912 ft.; T.D. 10,528 ft.; 7-in. csg. 10,494 ft.; fsg.

St. John the Baptist Parish

Pan American Prod. Co. No. 1 Mill, Sec. 12-11s-7e (LaPlace prospect). 10¾-in. csg. 2,837 ft.; T.D. 8,896 ft.; D.S.T. 8,870-96 ft.; tstd. 600 lb. W.P.; rec. 10 gal. dist.; drlg. sh. 9,924 ft.

St. Martin Parish

Wm. Helis' No. 2 Levert Plantation, Sec. 33-9s-7e. Drlg. sdy. sh. 2,111 ft.
Wm. Helis' No. 1 Rycade Oil Co., Sec. 33-9s-7e. Drlg. sdy. L. 5,676 ft.
Shell Oil Co., inc., No. 1 Iberville Ld. Co., Sec. 86-8s-7e. Cg. sh. 9,518 ft.

Terrebonne Parish

Barnsdall Oil Co.'s No. 1 Nelson, Sec. 2-21s-11e. Loc.
Continental Oil Co. et al's No. 1 Peters, Sec. 32-19s-15e. 13⅜-in. csg. 1,987 ft.; drlg. sh. 8,245 ft.
Shell Oil Co., inc., No. 1-A Peters, Sec. 47-19s-19e. Drlg. sh. 11,450 ft.

St. Mary Parish

Perry S. Cooney No. 1 A. W. Allain, Sec. 46-13s-9e. S.D. 2,600 ft.

Vermilion Parish

La. Ld. & Explo. Co.'s No. 3 La. Fur Co., Sec. 9-15s-1e. Drlg. sh. 3,012 ft.
Texas Co.'s No. 1 Vermilion Par. Sch. Bd., Sec. 16-13s-4e. Drlg. sh. 1,046 ft.

TEXAS

Week Ending October 28

GULF COAST FIELDS

Anchor—Brazoria County

Humble O. & R. Co.'s No. 1 M. W. Mettler, J. de Jesus Valderas Sur. 13⅜-in. csg. 944 ft.; drlg. sh.&L. 6,839 ft.
Glenn McCarthy's No. 1 Ida M. Salmon and John Muma, Geo. Robinson Sur. Drlg. sh. 6,134 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 6 Armstrong-fee, Polly-Chance Sur. T.D. 10,421 ft.; tstg.
Harrison-Abercrombie's No. 7 Armstrong, Polly & Chance Sur. Drlg. sh. 7,130 ft.
Harrison & Abercrombie's No. 1 Berthelsen, C. Breen Sur. Drlg. sd.&sh. 8,867 ft.
Mid-Continent Pet. Corp. No. 2 Chenault, C. Breen Sur. T.D. 10,400 ft.; tstg.
Sun Oil Co. No. 2 Borsodi, C. Breen Sur. 9⅝-in. csg. 7,005 ft.; T.D. 10,291 ft.; 7-in. csg. on bttm.; perf. csg. 10,165-80 ft.; tstg.; tstd. S.W.; reperf. csg. 10,130-50 ft.; tstd. S.W.
Sun Oil Co.'s No. 3 Campbell, C. Breen Sur. 13⅜-in. csg. 1,506 ft.; drlg. sd.& sh. 5,967 ft.

Cedar Point—Chambers County

Standard Oil Co. of Texas' No. 24-118 State. Top oil sd. 5,943 ft.; 7-in. csg. 6,005 ft.; perf. csg. 5,945-80 ft.; flwd. 20 B.P.H.; ¼-in. ck.; killed; gas-oil ratio high.
Standard Oil Co. of Texas' No. 55-119 State. Loc.

Seabreeze—Chambers County

Sun Oil Co. No. 2 Hoffman, T.&N.O. Sur. No. 131. T.D. 8,400 ft.; W.O.C.

South Cotton Lake—Chambers County

Salt Dome Oil Co.'s No. 2 Williams, S. Barrow Sur. T.D. 6,521 ft.; 5½-in. csg. 6,511 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co.'s No. 2 State, Tr. 39. Driving piling.

Garwood—Colorado County

Davis & Co., Inc., No. 1 J. R. McLane, I.&G.N. Sur. 41. Cg. 9,120 ft.

Big Creek—Fort Bend County

Merrimac Oil Corp. No. 1 George, B. Wickson Sur. (SW flank). Spd. and S.D.

Caplen—Galveston County

Sun Oil Co.'s No. 3 Cade, A. Dickson Sur. 10¾-in. csg. 1,939 ft.

League City—Galveston County

Phillips Pet. Co.'s No. 1 Brittnacher, S. F. Austin Sur. Drlg. sh. 5,112 ft.
Phillips Pet. Co.'s No. 6 Lobit, Perry-Austin Sur. Drlg. sh. 4,410 ft.
Phillips Pet. Co. No. 1 Dr. O. Patton (1 mi. E of production). Perf. csg. 9,177-97 ft.; flwd. S.W.; sqzd. perf.; C.O.
Phillips Pet. Co.'s No. 2 J. S. Rice est., J. M. Perry & Austin Sur. Drlg. sh. 5,972 ft.
Phillips Pet. Co.'s No. 3 Stewart Title Guaranty Co., S. F. Austin Sur. R.U.
Phillips Pet. Co.'s No. 4 Stewart Title Guaranty Co., S. F. Austin Sur. 10¾-in. csg. 3,520 ft.; T.D. 8,858 ft.; fsg.
Phillips Pet. Co. No. 1 Wimhurst (NW extension). T.D. 10,962 ft.; well tried to blow out; D.S. stk.; P.B. 10,630 ft.; prep. to perf. csg.

Aldine—Harris County

Earl C. Hankamer's No. 1 O. P. Hairgrove, S. L. Noble Sur. Cg. 7,227 ft.; no show.

Bammel—Harris County

H. M. Harrell's No. 1 Graves, C. Walters Sur. Loc.
H. M. Harrell's No. 1 R. M. Thornton, Ehrhardt & Ketchum Sur. Drlg. sh. 4,036 ft.

Clear Lake—Harris County

Humble O. & R. Co.'s No. 23-C Humble-West, Jas. Roth Sur. T.D. 5,908 ft.; tstg.
Humble O. & R. Co.'s No. 24-C Humble-West, Wm. Dobie Sur. Drlg. sh. 2,830 ft.

Friendswood—Harris County

Humble O. & R. Co.'s No. 32 Beamer, T. Choate Sur. Drlg. sh. 4,810 ft.
Humble O. & R. Co.'s No. 18 Kiesling, T. Choate Sur. Drlg. sh. 4,980 ft.

Texana—Jackson County

Moore-Ahern's No. 1 Clement, Stephen F. Austin Sur. Drlg. sh. 5,570 ft.

Fannett—Jefferson County

Gulf Oil Corp.'s No. 12 Burrell, W. H. Smith Sur. T.D. 3,625 ft.; D.S.T. 3,614-35 ft.; rec. 34 thrlb. oil; 7-in. csg. 3,629 ft.; swbg.

La Belle—Jefferson County

Sun Oil Co. No. 5 Broussard-Hebert, T. &N.O. Sur. No. 207. T.D. 8,710 ft.; perf. csg. 8,685-90 ft.; flwd. S.W.; made sqze. job; perf. csg. 8,667-71 ft.; tstd. S.W.; made sqze. job; S.D.

Lovells Lake—Jefferson County

Humble O. & R. Co.'s No. 7 Broussard, M. Grange Sur. Cg. 7,751 ft.
Humble O. & R. Co.'s No. 2-B Steinhagen, A. O. O'Donnell Sur. Drlg. sh. 6,651 ft.
Humble O. & R. Co.'s No. 3-B Steinhagen, A. O. Donnell Sur. Drk.
Stanolind Oil & G. Co.'s No. 1-B Steinhagen, H. O. Donnell Sur. Cg. gas sd. 7,748 ft.

South China—Jefferson County

Hebert-Smith's No. 1 Broussard, Sarah Miles Sur. Cd. oil sd. 7,878-86 ft.; 7-in. csg. 7,875 ft., T.D.

Esperson—Liberty County

General Crude Oil Co.'s No. 7-B Esperson, A. McNeil Sur. Drlg. sh. 4,130 ft.
General Crude Oil Co.'s No. 9-B Esperson, A. McNeil Sur. Drlg. sh. 2,012 ft.

Hull—Liberty County

Gulf Oil Corp. No. 115 Phoenix Dev. Co., J. Devore Lge. (SE flank deep test). 9⅝-in. csg. 5,004 ft.; drlg. sh.& L. 6,772 ft.

Mathe—Liberty County

Pan American Prod. Co.'s No. 1 Hutcheson, Beasley Pruitt Sur. Loc.
Stanolind O. & G. Co.'s No. 1 Frank Charzan, I.&G.N. Sur. 7. T.D. 8,164 ft.; 5½-in. csg. 8,163 ft.; perf. csg. 8,152-56 ft.; flwd. oil and S.W.; killed to reperf.
Stanolind O. & G. Co.'s No. 1 R. G. Palmer, I.&G.N. Sur. 7. R.U.
Stanolind O. & G. Co.'s No. 1 H. F. Tyrell, I.&G.N. Sur. 7. 10¾-in. csg. 1,214 ft.

Segno—Polk County

J. K. Dorrance's No. 5-A Wing, I.&G.N. Sur. Drlg. sh. 5,426 ft.
Gulf Oil Corp. No. 4 Quinn, A. Morales Sur. R.U.
Gulf Oil Corp.'s No. 4 Wing, I.&G.N. Sur., Sec. 15. Drlg. sh. 5,316 ft.
Gulf Oil Corp.'s No. 23 Wing, P. Garcia Sur. Drlg. sh.&L. 7,836 ft.
Humble O. & R. Co.'s No. 17-BX Kirby Lbr. Co., P. Garcia Sur. T.D. 8,165 ft.; W.O.C.
Jordan Drlg. Co.'s No. 1 E. H. Hughes, I.&G.N. Sur., Sec. 13. R.U.

Spurger—Tyler County

Republic Prod. Co.'s No. 26 fee, N. Hurd Sur. Drlg. sh.&L. 7,020 ft.
Republic Prod. Co.'s No. 27 fee, N. Hurd Sur. Drlg. sh. 6,536 ft.

Hoard
Exploration Co.
Seismograph Surveys
618 Esperson Bldg.
Houston - - Texas

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur Stephen F. Austin Sur. (Byran Mound) M.I.M.

Hamman Expltn. Co. No. 1-B Darrington, State Prison Farm, F. Bingham Sur. Rig.

D. M. Hill's No. 1 Max Bader, Wm. Smeathers Lge. Loc.

Humble O. & R. Co.'s No. 1 Hiram Moore, Hooper & Wade Sur., Lot 27. Loc.

Humble O. & R. Co.'s No. 1 A. M. Smith, W. D. C. Hall Sur. Drlg. sh. 1,100 ft.

Glenn McCarthy's No. 1 E. W. K. Andrau, H.T.&B. Sur. 5. 10¾-in. csg. 3,512 ft.

Glenn McCarthy No. 1 Houston Farm Dev., James F. Perry and E. Austin Sur. 7. T.D. 10,350 ft. (cor.): flwg. 32 bbl. dist. per day; ¼-in. ck.; killed; perf. csg. 9,864-74 ft.; I.P. 32 bbl. dist. per day; ½-in. ck.

Glenn McCarthy's No. 2 Houston Farm Dev. Co., J. Perry & E. Austin Sur. 7 10¾-in. csg. 3,492 ft.; T.D. 6,628 ft.; fsg.

Mayo & Frazier's No. 1 Darrington, State Prison Farm, A. McFarlan Sur. R.U.

Titanic Oil Co.'s No. 1 Allen, J. G. and G. W. McNeel Lge. (Allen dome). Drlg. sh. 4,185 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D Smith Sur. Loc.

J. R. Turnbull's No. 1 Kirby Lbr. Co., Chambers Co. Sch. Ld. Attempted D. S.T. 6,419-31 ft.; seat failed to hold; T.D. 6,431 ft.; W.O.C.

J. R. Turnbull et al No. 1 W. C. Shepherd, R. A. Porter Sur. T.D. 6,466 ft.; 7-in. csg. 6,429 ft.; flwd. oil, gas, and wash wtr.; sanded up; sdtrkd. 6,463 ft.; T.D. 6,700 ft.; P.B.; perf. 6,457-65 ft.; S.D.

Colorado County

Cockburn Oil Corp. No. 1 R. W. Ferris H. Chrisman Sur. Loc.

Fort Bend County

H. C. Cockburn's No. 1 G. W. Burkett, Bundieck Sur. Loc.

H. C. Cockburn No. 1 Dzierzanowski Emma Meyer Sur. 8. 10¾-in. csg. 1 058 ft.; T.D. 7,743 ft.; flwd. 85 B.F., 97% oil, 3% S.W.; ¼-in. ck.

Gulf Oil Corp.'s No. 1 Russell Brown, William Pettus Sur. R.U.

Magnolia Pet. Co.'s No. 1 G. H. Huntington, Henry Scott Sur. Drlg. sh. 3,780 ft.

Superior Oil Co.'s No. 1 A. P. George, Wiley Martin Sur. Loc.

Galveston County

Sun Oil Co.'s No. 1-176 State. Drlg. sdy. sh. 7,093 ft.

Grimes County

Roan, Coker & Kile's No. 1 W. W. Greer, Patrick B. O'Connor Sur. 10¾-in. csg. 41 ft.; drlg. sd.&sh. 2,175 ft.

Harris County

Temple Hargrave's No. 1 Herman Hospital, Wm. Hardin Sur. Drlg. sh. 3,916 ft.

Dick Schwab's No. 1 W. H. Robertson, Andrew Lawson Sur. Drlg. sh. 3,630 ft.

McDannald Oil Co.'s No. 1 C. Brown, H. T.&B. Sur. 7. Drlg. sh. 2,260 ft.

L. R Wilhite et al No. 1 Houston-Harris Co. Ship Channel, Nav. dist., Ezekiel Thomas Sur. 13-in. csg. 388 ft.; S.D 2,600 ft.

Jackson County

Skelly Oil Co.'s No. 1 Kunover, Schwind & Mahers subd., Blk. 4 (Francitas field). T. D. 9,031 ft.; rng. csg.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.

Matagorda County

Gulf Stream Oil Co.'s No. 1 G. W. Zipprian, Luke Lessassier Sur. Drk.

Pure Oil Co.'s No. 1 J. L. Woodhouse, Lewis De Moss Sur. Loc.

Montgomery County

David B. MacDaniel's No. 1 Hattie O. Baldwin, Walker Co. Sch. Ld. Sur. 10¾-in. csg. 1,230 ft.

Orange County

American Eagle Oil Co. No. 2 Geo. Pell, Geo. A. Patillo Sur. Loc.

Polk County

Patrick-Tyrell Drlg. Co. No. 1 O. L. Jackson, C. Devore Sur. Loc.

San Jacinto County

F. J. Hynes No. 1 Foster Lbr. Co., M. Brown Sur. Rig.

F. J. Hynes No. 2 Foster Lbr. Co., M. Finch Sur. Loc.

Tyler County

Oil Equity Corp.'s No. 2 Kountz, E. Smith Sur. Loc.

Washington County

Mount Selman Oil Co. No. 1 Fritz Fuelberg, W. Lightfoot Sur. Drlg. sh. 2,580 ft.

Wharton County

Sam G. Harris et al's No. 1 C. T. Kountz, A.T.R.R. Sur., Sec. 51. Drlg. sh. 3,186 ft.

Houston Oil Co.'s No. 1 H. W. Hinze, Robt. Kuykendall Sur. (Spanish Camp area). Loc.

Humble O. & R. Co.'s No. 1 L. B. Henry, Napoleon B. Williams Sur. Loc.

J. F. Hutchins' No. 1 A. P. Borden, Euclid M. Cox Sur. Drk.

Dr. T. M. Neal No. 1 fee, Elisha Flack Sur. Loc.

Sun Oil Co.'s No. 1 Winnie M. Pool, G. H.&R.R. Sur. Drlg. sh. 6,626 ft.

S. W. TEXAS WILDCATS

Aransas County

Continental Oil Co.'s No. 1 St. Charles Co., R. D. Blassman Sur. 18⅝-in. csg. 290 ft.; T.D. 8,384 ft.; fsg.

Bastrop County

C. R. Franklin's No. 1 Oscar McDonald, Martha Barker Sur. Drk.

Marts & Beaven's No. 1 J. E. Ferguson, Jas. Doyle Sur. Drlg. sh. 1,730 ft.

Bee County

J. R. Dougherty's No. 6 Hicks, J. M. Uranga gr. T.D. 4,438 ft.; abd.

Mills Bennett Prod. Co.-Anderson-Prichard Oil Corp.'s No. 1 D. E. Robinson, J. M. Uranga Sur. Drlg. sdy. sh. 5,640 ft.

Bell County

G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,208 ft.

Bexar County

J. A. Tarver's No. 1 Florence Lam, Manuel de Luna Sur. 3. 6⅝-in. csg. 1,205 ft.; T.D. 1,692 ft.; cd. bkn. sh. 1,638-92 ft.; S.S.O.; tstg.

Blanco County

E. L. Nixon's No. 3 Crist, John McClenechen Sur. 94. S.D. 50 ft.

Brooks County

Magnolia Pet. Co.'s No. 1 Vivian Rust, La Gloria townsite subd. Cg. sdy. sh. 5,650 ft.

Caldwell County

Dr. J. F. Atha's No. 1 G. W. Carter. Gideon Pace Sur. T.D. 1,793 ft.; 7-in. csg. 1,744 ft.; pmpg. 12 B.O. and 4 B.W. after treating with acd.

Calhoun County

Coronado Corp. No. 1 K. Welder, Hidalgo Sur., 3 mi. SE Seadrift. T.D. est. 8,310 ft.; S.D.

Cameron County

Sal Vieja Oil Co. et al's No. 2 Gatewood Newberry, San Martin gr. Drlg. sh. 8,310 ft.

De Witt County

Atlantic Ref. Co.'s No. 1 Pearl Conwell, Chas. Lockhart Sur. Loc.

Marshall Purvis No. 1 Afflerback, L. W. Criswell Sur. T.D. 6,450 ft.; P.B.; sdtrkd.; drlg. sdy. sh. 6,910 ft.

Duval County

J. B. Blanchard et al's No. 1 J. G. Lowe, J. G. Lowe Sur. R.U.

W. L. Catlin et al No. 1 Louis Escapule, J. Poitevent Sur. No. 73. Loc.

Magnolia Pet. Co.'s No. 1 D.C.R.C. Urbano Suarez Sur. 300. Loc.

Standard Oil Co. of Texas' No. 1 Jack Casey, San Pedro de Charco Redondo gr. T.D. 6,746 ft.; 7-in. csg. to test 6,722 ft.; perf. csg. 5,334-45 ft.; tstd. gas and dist.; S.I.

Falls County

J. Shaunfield No. 1 Barganier, J. M. Graham Sur. T.D. 1,195 ft.; Buda L.; S.S.O.; waiting on csg.

Goliad County

D. C. Matthews et al's No. 2 G. J. Swickheimer, Wm. Patterson Sur. (Fannin field). S.D. 3,512 ft.

Gonzales County

J. A. Walker et al's No. 1 C. L. Dubose, E. C. Coffman Sur. Drlg. sh. 209 ft.

E. E. Young No. 1 Moore, D. O Warren Sur. T.D. 3,350 ft.; prep. to abd.

Guadalupe County

Pat Armstrong's No. 1 Ernst Saeti, J. D. Clement Sur. R.U.

Burton-Garvin & Womack's No. 2 Henry Weil, E. de Los Santos Coy Sur. No. 93. R.U.

Jim Hogg County

W. C. Gray et al's No. 1 Rosa Palacios, G. W. Waddell Sur. S.D. 50 ft.

Mayfair Oil Corp.'s No. 1 I. R. Gutierrez, C. Gutierrez Sur. 164. S.D. 2,398 ft.

C. A. Nibert et al's No. 1 Yeager Sur. 20. S.D. 1,316 ft.

Jim Wells County

Austin Pet. Co. No. 1 H. M. Reed (8 mi. NW Orange Grove), J. Poitevent Sur. Cmtd. surf. pipe 190 ft.; S.D. 210 ft.

Rodney DeLange et al's No. 1 Maggie McNeill, Benito Lopez de Jean gr. Tstd. 450 lb. pres.; D.S.T. 4,762-80 ft.; T.D. 5,410 ft.; 5½-in. csg. 4,880 ft.; perf. csg. 4,786-90 ft.; flwd. 63 bbl. dist.: 20 hrs.: 7/64-in. ck.; T.P. 1,750 lb.; C.P. 1,900 lb.; S.I.; sqzd. per.; reperf. csg.; tstg.

H. H. Howell et al's No. 1 N. Hinojosa, S.K.&K. Sur., Sec. 229. Drlg. sh. 2,725 ft.

Magnolia Pet. Co.'s No. 1 C. C. Hornsby, Los Olmos y Loma Blanca gr. T.D. 6,435 ft.; D.S. stk.

Magnolia Pet. Co.'s No. 1 W. C. Hornsby (La Gloria field). Drlg. sh. 4,636 ft.

Magnolia Pet. Co.'s No. 1 E. H. Stolze et al, Los Olmos y Loma Blanca gr., Lot 16, Blk. 10. Drlg. sh. 6,673 ft.; cd. sd.&sh. dist. odor 6,568-6,637 ft.

V. J. Meyer and V. F. Simon's No. 2 Shear, A.B.&M. Sur. (Magnolia City field). Drlg. sh. 5,388 ft.

Trinity Drillers et al's No. 1 Temple Lbr. Co., Los Presenos de Arriba gr. Loc.

Karnes County

Clyde Eckols' No. 1 J. M. Newberry, Carlos Martinez Sur. Drlg. sh. 450 ft.

Kendall County

C. M. Dewey's No. 2 Seidensticker, R. Davis Sur. No. 20. S.D. 714 ft.

Kimble County

A. L. Bierschwale's No. 1 F. W. Kraeke, Sur. 366. Drlg. L. 407 ft.

C. H. Wolff & M. C. Moore No. 1 W. J. Wilkinson, Brook & Burleson Sur., Sec. 24. S.D. 20 ft.

Kleberg County

Humble O. & R. Co.'s No. 1 M. Garza, Rinconde Santa Gertrudis gr. T.D. 6,937 ft.; abd.

Humble O. & R. Co.'s No. 1 J. M. Reed, Rincon De Santa Gertrudis gr. R.U.

Pure Oil Co.'s No. 1 State, Tr. 171 (Bird Island field). Drlg. sh. 7,860 ft.

La Salle County

John Vivian's No. 1 Louis Yeager, A.B. &M. Sur. 53. Drlg. 310 ft.

Lavaca County

Midway O. & R. Co.'s No. 1 Annie Schumacher. T. Wix. 6,339 ft.; S.D. 6,851 ft. abd.

Lee County

Fred Pederson et al No. 1 Brown, Davis Hudson Sur. T.D. 6,655 ft.

Live Oak County

A. R. Pohler's No. 1 A. J. Turner, Stephen Hays Sur. T.D. 899 ft.

L. W. Stieren's No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

J. C. Carter's No. 1 Thomas Franklin, E. L. Taylor Sur. 30. Loc.

Harrison & Ross' No. 1 T. A. Bracken, W. W. Allsberry Sur. 30. S.D. 825 ft.

Earl W. Rowe's No. 1 M. H. Reed, Seale & Morris Sur. 153. Drlg. sh. 650 ft.

C. D. Scarborough No. 1 First Natl. Bk. of Rosebud, Jas. Garner Sur. Drlg. sh. 1,610 ft.

Wellington Oil Co.'s No. 1 Sam Sanger, C.P. Smith Sur. 194. S.D. 2,495 ft.

Medina County

Elstone Oil Co.'s No. 1 Wm. Mann, J Campbell Sur. 24. T.D. 903 ft.; 8¼-in. csg. 635 ft.

Milam County

M. A. Hays et al's No. 1 Sroboda, Wm. Punchard Sur. T.D. 1,563 ft.; may abd.

W. H. Lawrence et al's No. 1 J. F. Bartek, Jose De Pena Sur. Drlg. 1,150 ft.

Nueces County

John Manley et al No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. Loc.

Premont Pet. Co.'s No. 1 G. A. Langham, Los Sauces gr., Lot 12, Sec. 25. T.D. 5,240 ft.; tstd. 360 ft. oily mud. 30 ft. S.W.; T.D. 7,161 ft.; 7-in. csg. 5,681 ft.; perf. csg. 5,615-28 ft.; perf. csg. 5,069-79 ft.; rec. mud, gas, and S.W. on D.S.T.; perf. csg. 5,080-82 ft.; swbd.; perf. csg. 5,070-83 ft.; swbd. S.W., some oil; abd.

Stanolind O. & G. Co.'s No. 1 Jennie Thompson, J. V. L. de Herrera gr. (Riverside field). Cg. 5,215 ft.; cd. sd. sec. 4,878-4,919 ft.

Refugio County

Hewitt & Daugherty's No. 3-A Rooke-Wagner, Jose Miguel Aldrete 4 Lge. and 1 Lge. gt. Drlg. sh. 5,410 ft.

Morgan Gulf Oil Corp.'s No. 1 J. M. Thomas, G. E. Cobian and Family Sur. Cg. 6,180 ft.

Norsworthy Prod. Co. No. 1 Wood, John Sinnott Sur. T.D. 6,508 ft. (cor.); S.D.

San Patricio County

Seaboard Oil Co.'s No. 1 M. C. Smith, Juan Hart & Sons Sur. T.D. 7,296 ft.; 5½-in. csg. 7,108 ft.; perf. csg. 7,058-60 ft.; tstd. S.W.; perf. csg. 6,995-7,000 ft.; tstd. gas and dist.; perf. csg. 5,915-25 ft.; perf. csg. 5,380-88 ft.; flwd. S.W. on D.S.T.; drld. out to 7,000 ft.; flwd. 6 bbl. dist. in 1¼ hrs.; ¼-in. ck.; W.P. 2,275 lb.; gr. 51; tstg.

Wellington Oil Co.'s No. 2-B Welder, Victoriano Tares & Pedro Villareal Sur. T.D. 6,105 ft.

Starr County

C. L. Foster's No. 1 H. Garza, Juan Salinas, Porc. No. 71. S.D. 100 ft.

W. E. Gilbert's No. 1 Escobas, Jose F. Garza, Porc. 71. S.D. 106 ft.

Gilcrease Oil Co.'s No. 1 I. G. Gutierrez, J. LaGarza Falcon Porc. 104. S.D. 2,150 ft.

Lynes & Robertson's No. 1 Villareal, C. C.S.D.&R.G.N.G.R.R. Sur. 241. Loc.

Victoria County

Colton & Colton's No. 1 E. Terrell, A. Sideck Sur. T.D. 2,889 ft.

Houston Oil Co.'s No. 1 E. C. Dietzel, P. Gallardo Sur. T.D. 5,171 ft.; logged O.S. 4,828-38 ft.; run 7-in. csg.

Renwar Oil Corp.'s No. 1 M. L. Stoner, Diego Garcia Sur. R.U.

Stewart Boyle's No. 1 Simon, Victoria Four Lge. R.U.

Wellington Oil Co. et al's No. 1 J. W. Boothe, T.&N.O. Sur., Blk. 1, Sec. 10. Drlg. sh. 8,086 ft.

Webb County

W. C. McBride, Inc.'s No. 1 Manuel Vela, C.C.S.D.&R.G.N.G. Sur. 265. Loc.

Magnolia Pet. Co.'s No. 2 Garcia-Arriba Alberca De Arriba gr. T.D. 4,250 ft.; abd.

Mayfair Oil Corp.'s No. 3 Bruni, J. V. Borego gr. Loc.

J. R. B. Moore et al's No. 1 A. S. Billings, C.C.S.D.&R.G.N.G. Sur. 13. T.D. 2,518 ft.; abd.

Tide Water Asso. Oil Co. No. 7 Bruni, Blk. 7, M. Arispe gr. (deep test Bruni field). Drlg. sh. 7,536 ft.

Williamson County

Brown-Gardner et al's No. 1 G. W. Griffin, Harrison Owens Sur. S.D. 2,214 ft.

Knisely, Aldridge, Cockburn's No. 1 D. M. Sloan, J. W. Baker Sur. 2. Cg. Edw. 1,046 ft.

Williams & Vick's No. 1 Mrs. Schram, Willis West Sur. S.D. 1,400 ft.

Zapata County

J. P. Martin et al's No. 1 Serapio Vela, El Grullo gt. Bldg. drk.

Joe Martinez No. 2 Bruni, J. V. Borego gr. T.D. 938 ft.; S.D.; abd.

WEST TEXAS WILDCATS

Brewster County

H. D. Wilcox's No. 2 Kokernot, Sec. 23, Blk. C, J. V. Massey Sur. S.D.O. 1,610 ft.

Cochran County

Atlantic Ref. Co.'s No. 1 Boyd, Labor 11, Lge. 56, Oldham C.S.L. Drlg. 4,518 ft.

Dean & Hyde's No. 1 Reed & Taylor, Sec. 21, Harrison & Brown Sur., SE of Duggan pool. Drlg. 3,570 ft.

Humble O. & R. Co. No. 1 J. Westheimer, Lab. 1, Lge. 146, Stonewall Co. Sch. Ld. Drlg. 7,370 ft.

Crane County

Gulf Oil Corp. No. 5 M. B. McKnight Sec. 1, Blk. 21-B, P.S.L. Sur. Drlg. 5,480 ft.

Gulf Oil Corp.'s No. 12 Waddell, Sec. 30, Blk. 26-B, P.S.L. Sur. M.I.M.

Crockett County

Kimberlin's No. 1 J. W. Robbins, Sec. 4, Blk. B, G.C.&S.F. Sur. S.D. 355 ft.

Crosby County

Gulf Oil Corp. No. 1-C Swenson, Sec. 96, Blk. 2, H.&G.N. Sur. Cg. 7,812 ft.

Dawson County

Ray Albaugh's No. 1 Dewey Hogg (O. W.D.D.). S.D. 4,205 ft.

Ector County

I. T. I. O.'s No. 1-B Johnson, Sec. 39, Blk. 43, T.&P. Sur. Drlg. 4,075 ft.; S. O. 4,055 ft.

Sloan & Zook No. 1 J. L. Johnson, Sec. 34, Blk. 43, T.&P. Sur. P.B. 4,167 ft.; tstg. 24 B.O.P.D.; P.B. 4,167 ft.; 19 B.O. and 16 B.W.; 6 hrs.; pmpd. 7 B. O. and 7 B.W. daily for 7 days; S.D.O.

Gaines County

Stanolind O. & G. Co.'s No. 1 American Warehouse, Sec. 5, D.&W. Sur., offset to No. 1 Rayner, discovery well. M.I.R.

Stanolind O. & G. Co.'s No. 1 T. S. Riley, Sec. 11, Blk. H, D.&W. Sur. M.I.R.

Hockley County

Geo. P. Livermore's No. 1 R. D. Glimp, Sec. 8, Blk. X, P.S.L. Sur. Loc.

Howard County

F. H. E. Oil Co. et al No. 2 D. H. Snyder, Sec. 21, Twp. 1s, Blk. 30, T.&P. Sur.; (extension). Tstg. 2,855 ft.; 100 B.O. and 6 B.W.P.D.; S.D. 2,855 ft.

M. L. Richards No. 1 Read, Sec. 36, Blk. 30, T.&P. Sur. Drlg. 2,850 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co. Sec. 151, H.E.W.T. Sur. Drld. out 3,570 ft.; S.D.O.

Pecos County

Stanley Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Drld. by 7,073 ft.; 500 ft. S.W. in hole; S.D.O. 7,342 ft.

Superior Oil Co. No. 1 V. W. Crockett-Continental Oil Co., Sec. 7, Blk. 110, T.C.R.R. Sur. C.&P.

Reeves County

T.A.T. Oil Co.'s No. 1 U. G. Orenderff, Sec. 10, Blk. 59, P.S.L. Sur. Spd. and S.D. at 9 ft.

Scurry County

Coffield & Guthrie's No. 1 Reiter, Sec. 155, Blk. 97, A.&T.C. Sur. Drlg. 980 ft.

Terrell County

F. M. Thomasson No. 1 Bates, Sec. 31, Blk. 1, H.&G.N. Sur. S.D.O. 1,117 ft.

Tom Green County

Dan Short's No. 1 J. G. Davidson, NW part of Lovie P. Moore Sur.; 3,500-ft. test. Lowering 8-in. 2,585 ft.

Upton County

N. A. Moore's No. 1 A. M. Mayhew, Sec. 2, Blk. W, G.C.&S.F. Sur. Drlg. 1,852 ft.

Ward County

Gulf Oil Corp. No. 5 Wristen, Sec. 18, Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. Straightening hole; drlg. out 2,515 ft.

Magnolia Pet. Co.'s No. 2-43 Sealy, Sec 43, Blk. F, G.M.M.B.&A. Sur. Making 25,000,000 cu. ft. gas; S.D. W.O. 2,952 ft., T.D.

Merry Bros. & Perini's No. 1 Bird Hayes, Sec. 148, Blk. 34, H.&T.C. Sur. Loc.

Yoakum County

Sloan & Zook and T. N. Sloan's No. 1 J. E. Fitzgerald, Sec. 22, Blk. D, Gibson Sur., extreme NE cor. of county. U.R. 238 ft.

TEXAS PANHANDLE

Deaf Smith County

Uscan No. 1 Farwell, Sec. 18, Blk. 3, X Sur. C.O. 5,650 ft.

Hartley County

Phillips Pet. Co. No. 1 W. K. Gordon, Sec. 3, Blk. 44, H.&T.C. Sur. Drlg. 3,455 ft.; showed 34,300,000 cu. ft. gas below 3,415 ft.; P.B. for gas well 3,415 ft.

Lipscomb County

Phil O'Neil's No. 1 Jacob Koch, NW¼ SW¼ Sec. 539, T.&T.C.R.R. Sur. S.D. 1,100 ft.

Ochiltree County

James R. Macon et al No. 1 W. R. Norris SW SE Sec. 212, Blk. 43, H.&T.C. Sur. Bailing rotary fluid preparatory to resuming drlg. with C.T.; T.D. 6,274 ft. prep. acd. and test sec. at 5,000 ft.; est. 6,000,000 cu. ft. gas on D.S.T.; C.O. 5,000 ft.

Potter County

Les Whitaker No. 1 D. Pavillard. Sec. 101, Blk. 2, A.B.&M. Sur. Fsg. 915 ft.

Sherman County

Hagy, Harrington & Marsh's No. 1 W. Freeman, Sec. 46, Blk. 2, G.H.&H Sur. W.O.C. 2,705 ft.

I.T.I.O.'s No. 1 S. C. Bryant, NW¼ Sec. 369, Blk. 1-T, T.&N.O. Sur. R.U.R.

E. C. TEXAS WILDCATS

Anderson County

A. Baggett's No. 1 J. R. Gillispie, J. R. Ferguson Sur., 2½ mi. NE of Frankston. S.D. 4,350 ft.

R. H. Williamson No. 1 O. G. Rogers Wm. Greenwood Sur., 6 mi. SW of Elkhart. Drlg. 3,883 ft.

Angelina County

Ginter Bros. No. 7 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. S.D. 800 ft.

K. L. McHenry's No. 2 Russell est., A. Flores Sur., 4 mi. N Lufkin. Prep. rng. csg. topped sd. 1,002 ft. 2 B.O. and 4 B. wtr. in 5 min.

Falls County

R. D. Salisbury No. 1 W. M. Shankle, J. A. Manchaca Sur., 1½ mi. NE Chilton Recmtg. pipe 1,274 ft.

Fannin County

H. W. English's No. 1 T. W. Ayers, J. D. Seales Sur. S.D. 687 ft.

C. Newburn's No. 1 A. G. Allen, M. Caldwell Sur., 7 mi. NE of Banham. Drk.

Grayson County

Ross & Marshall's No. 2 E. Christman, M. Ahult Sur., 5 mi. NW of Denison. S.D. 725 ft.

Rutledge Oil Co.'s No. 1 Williams, S. Nix Sur., 2 mi. NE of Van Alystine. Drlg. 4,160 ft.

Hill County

Carter-Bowland's No. 1 J. J. Atchison estate, E. Carrol Sur., 5 mi. W of Hillsboro. Rng. csg. 85 ft.

Houston County

J. C. Cook and Shell Oil Co.'s No. 1 B. T. Masters, Levina Carpenter Sur., ½ mi. NW of Grapeland pool; 10,000-ft. test. Drlg. 5,770 ft.

Grapeland Oil Co.'s No. 1 Guice, J. D. J. Procilla Sur., 2 mi. W of Grapeland Top. sd. 5,908 ft.; prep. comp. as distillate well; S.I. 5,958 ft.

J. C. Wynne et al's (Shell Oil Co., Inc.) No. 1 G. E. Dorsey, M. Sallas Sur., 2½ mi. S of Percilla; F. 102 ac. of tr.; 10,000-ft. test. Drlg. 6,300 ft.

Hunt County

K. E. Jennings' No. 1 V. T. Banks, J. W. Haynes Sur., 5 mi. NE of Greenville; reinstated to test sec. at 2,114 ft.; S.D.W.O. 3,342 ft.

Westmount Oil Co.'s No. 1 Clark, W. H. Williams Sur., 1 mi. NW of Celeste. Drlg. 515 ft.

Limestone County

M. Samuel's No. 1 C. Barrow, W. G. McKinsey Sur., 4 mi. NW of Thornton. S.D.O. 6,029 ft.

Navarro County

J. H. Burke's No. 1 fee, Edmonson Sur., 1 mi. N of Powell. Drlg. 135 ft.

C. F. Carter's No. 1 Allen Eden, M. Shire Sur., 2 mi. NE of Angus. Drlg. 980 ft.

Red River County

Dave Flesch's No. 1 Bailey, J. Robbins Sur., 1 mi. W of Bagwell. Prep. D.D. 2,538 ft.

Kansas-Oklahoma Pet. Corp. No. 1 R. H. Ringwald, A. Moore Sur., 3 mi. W of Manchester. S.D. 955 ft.

Rusk County

Marietta Corp.'s No. 1 E. B. Alford, Thos. Howeth Sur., 1 mi. S of Pinehill. R.U.

A. O. Whittington's No. 1 Kangerga Bros., lgn. Castro Sur., 9½ mi. N and slightly E of Pirtle. Bldg. drk.

Smith County

Dr. Grant's No. 1 J. W. Waters, J. Stapler Sur., 1¼ mi. NE of Garden Valley. Drlg. 5,750 ft.

Shell Oil Co., Inc.'s No. 1 H. Campbell, P. Lively Sur., 1½ mi. N of Chapel; 9,500-ft. test. Loc.

[illegible] Co.'s No. 1 A. A. Scritchfield, D. Page Sur., 2 mi. NW of Bullard. Fsg. bit cone 7,834 ft.; did not set csg.

Trinity County

Gossage et al's No. 1 First Natl. Bnk., B. F. Wright Sur., S of Trinity. R.U. and S.D.

NORTH TEXAS WILDCATS

Archer County

L. T. Burns' No. 1 J. Penartz, Sec. 19, Clark & Plumb Sur., Blk. 4. Drk.

L. B. Burns' No. 1 H. Wilmut, Lot 13, G.N. Smith Sur., Abst. 393 (4,400-ft. semiwildcat). Drlg. 2,350 ft.

W. B. Hamilton's No. 5 C. E. Graham, J. D. Young Sur. A-1249. Drlg. 5,160 ft.

Waldo E. Stephens et al's No. 1 Hattie B. Adne, SE part of Blk. 7, Palo Pinto Co. Sch. Lds., 3 mi. SE of Griffin pool. Set 10-in. 100 ft.; R.U.R.

Clay County

L. T. Burns No. 1 J. T. Pickett, W. W. Yearly A-745. 6⅝-in. 4,430 ft.; O.S. 4,430-44 ft.; P.B. 4,380 ft.; drld. out to 4,450 ft.; S.D.O.

Continental Oil Co. et al's No. 1 O. O. Ross, W. Walker Sur. A-703. Set 158 ft. 10-in.; drlg. 3,065 ft.

Frabor-Hodges and Sinclair Prairie Oil Co.'s No. 1 Scaling, G. P. Meade Sur., Abst. 928. Drk.

Cooke County

Bridwell Oil Co.'s No. 1 Joe Fisher, SW part of Lot 10, John Barnett Sur., Abst. 42. Drlg. 1,156 ft.

Cottle County

J. E. Burns et al No. 1 J. E. Moss, Sec. 5, Blk. L, A. Forsythe Sur. Jnkd. 225 ft.; skid 20 ft. S.; drlg. 1,569 ft.

Hardeman County

Carter & Taylor's No. 1 Norton, NW cor. 91-ac. tr. in Blk. 3, Robt. Young Sur., 16 mi. N of Quanah. S.D. 256 ft.

G. T. Kimble No. 1 M. T. Walling, SW¼ Sec. 368, Blk. H, H.W.&N.W. Sur., 5,500-ft. test. Drlg. 5,500 ft.

Jack County

Harper Pet. Corp. No. 2 S. V. Vanhooser, Abst. 1926, J. W. Morrow Sur. T.D 2,030 ft.; S.D.O.

Pitzer & West's No. 1 Sloan, Sec. 2786, T.E.&L. Sur. Drlg. 1,640 ft.

Montague County

Sackett and Continental No. 1 J. L. Brown, Sec. 58, E.T.R.R. Drlg. 5,525 ft.

Wichita County

W. B. Hamilton's No. 1 H. Lalk, Blk. 285, W.C. Sur. Drlg. 1,900 ft.

Wilbarger County

Lawson & Leavall's No. X-1 W. T. Waggoner, NE¼ Sec. 37, Blk. 4, H.&T.C. R.R. Sur. S.S.O. 1,930-33 ft.; S.D.O.

Rogers & Cavin No. 1 A. P. Morris, Sec 3, Blk. 14, SW of Harrold. S.D. 2,373 ft.; wtr.

Wise County

W. F. Holifield et al's No. 1 J. Redell, Rebecca Coleman Sur., Abst. 155, 2 mi. E of Bridgeport. Moved off spdr.

C. A. Johnston and others' No. 1 J. C. Vance, Sec. 37, T.&P. Sur. Drlg. 1,203 ft.

H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Ld. Pits.

Young County

H. W. Dyer's No. 1 M. G. Cheney, M. L. Terry Sur., Abst. 1261. Loc.

Stanley Thompson et al No. 1-A J. C. Vaughn, Blk. 3, T.&N.O.R.R. Sur., Abst. 1248; 4,250-ft. cable tool test T.D. 4,335 ft.; P.B. 4,080 ft.; to test L.S.O. 3,937-4,060 ft.; tstd. dry; P.B. 3,970 ft.; W.O.C.

A. T. Strong et al's No. 1 E. C. Stovall, Sec. 2946, T.E.&L. Sur. (4,800-ft. test). R.U.C.T.

Taubert & McKee Drlg. Co.'s No. 1 Shanafelt, P. Pointevent Sur., Abst. 1309. 6⅝-in. 4,012 ft.; treating 2,000 gal. acid 4,437-4,500 ft.

EAST TEXAS

(Border Counties)

Cass County

G. Scott Hammond's No. 1 Price, C S½ W 40 acres, 125-acre tr., Chas. Ames Sur. 10¾-in. csg. 1,045 ft.; T. Gloyd 5,860 ft.; por.; cleaned hole; set 5½-in. csg. 5,865 ft.; tstd. 1,000,000 cu. ft. gas; W.O. ga.

Marion County—Other

Otto Davis' No. 1 Hart, Gaines Coore Sur. Set 10-in. csg. 22 ft.; W.O.C.

M. D. Fitzwater No. 1 Mrs. Mary Duncan, Jesse Fitzgerald Sur. T.D. 2,558 ft.; swbd. and bailed dry; tstg.

J. D. Reynolds' No. 2-B Terry est., W. Coore Sur. T. Tokio 2,333 ft.; T.D. 2,380 ft.; flwd. 40 B.P.H. for 2 hrs. and went dead; W.O.S.R.

J. D. Reynold's No. 3-B Terry est., 660 ft. EL., 2,250 ft. SL., W. Coore Sur. M.I.M.

Sutton et al's No. 1 W. Taylor, 450 ft. EL., midway N and SL., B.B.B.&C.R.R. A-54 Sur. Set 6-in. csg. 2,289 ft.; T.D. 2,313 ft.; pulled lnr.; swbg. some heavy oil.

Marion County—Rodessa

Ark. La. Gas Co.'s No. 2 W. T. Neilson, 1,320 ft. N line, 620 ft. SE line, R. Bennington Sur. Drlg. L.&sh. 5,830 ft.

Gulf Oil Corp.'s No. 3 Ray, 514 ft. NL, 641 ft. EL, 65-ac. tr., J. Hanks Sur. Drlg. sd.&sh. 4,245 ft.

C. H. Lyons' No. 1 Jackson, 473 ft. NL, 460 ft. WL, 20-ac. tr., J. Hanks Sur. Drlg. L.&sh. 4,696 ft.

Shell Oil Co., Inc.'s No. 3 Whelan, 330 ft. S and W line tr., T. Gillespie Sur. Drlg. L.&sh. 4,375 ft.

Texas Co.'s No. 6 Braden, J. M. Fitzgerald Sur. Drlg. sh.&L. 5,653 ft.

Shelby County

Natural Gas Dist. Corp.'s No. 1 W. B. Childress, 1,000 ft. W of Redditt & Gray's No. 2 Pickering, W. M. Snider Sur. Set 5½-in csg. in gas zone; W.O.C.

W. H. Neel et al's No. 1 J. W. Hanson, C 64-ac. tr., A. Sanford Sur. Set csg.; no report.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce's No. 1 L. S. Mauldin, SW¼ Sec. 15, H.T.&B. Sur., Abst. 464. Fsg. tools 1,691 ft.

Kynaston & Cullison's No. 1 L. A. Hill SW¼ Sec. 35, H.T.&B. Sur. Drlg. 855 ft.

C. C. Lockwood's No. 1 T. B. Landreth, SE cor. of Subdivision 2, J. Dickinson Sur. 10. S.D.O. 923 ft.; S.S.O. 922-23 ft.

Plains Prod. Co.'s No. 1 Hill, SE cor. W 123 ac. of M. Mudgett Sur. 63. S.D.O. 749 ft.

Wilson Oil Co., Inc., No. 1 M. Bowden, Sec. 138, W. E. Gilliland Sur. S.D.O. 2,100 ft.

Callahan County

J. L. Reeves et al's No. 1 P. G. Hatchett, NW¼ Sec. 30, D.&D.A. Sur. S.D.O. 460 ft.

S. B. Roberts' No. 1 Mitchell, SW NE Sec. 28, B.A.L. Sur., outpost to Bowles pool. Drlg. 500 ft.

Coleman County

B. Banner's No. 1 R. R. Powell, NW part of Moses Little Sur. 40. S.D. 1,100 ft.

Kynaston-Culberson-Culberson & Bozeman No. 1 J. P. McCord, Sec. 159, J. W. Meeks Sur. S.D.O. 2,300 ft.

States Oil Corp.'s No. 1 J. P. Morris, SE part of J. P. Stone Sur. 6. Loc.

Concho County

Natural Resources Corp. No. 1 Armor, Sec. 105, Blk. 72, T.&N.O. Sur. S.D.O. 1,216 ft.

Coryell County

W. E. Crews' No. 1 S. C. Blanchard, W part of Wm. H. King Sur.; 2 mi. SW of Mound. 5,000-ft. test. Loc.

Eastland County

Dobbs Oil Corp.'s No. 1 Pierce, 330 ft. SL and 330 ft. EL of 214-ac. tract in Sec. 35, Blk. 2, H.&T.C. Sur. Fsg. 1,045 ft.

R. R. Groce's No. 1 J. M. Rush, Sec. 130, Blk. 3, H.&T.C. Sur. S.D.O. 1,728 ft.

F. S. Holden's No. 1 J. F. Nichols, L. A. McDonald Sur., Abst. 829. Drlg. 855 ft.

Lone Star Gas Co.'s No. 1 F. J. Kimmel Sec. 87, Blk. 4, H.&T.C.R.R. Sur. U.R. 10-in. 2,010 ft.

J. L. Reeves No. 1 J. V. Parker, NW part of Wm. Van Norman Sur. Fsg. 3,077 ft.; S.S.O. 3,019-41 ft.; P.B. 3,052 ft.; fsg.

W. A. Stiles et al's No. 1 H. F. Duncan, Sec. 10, Blk. 2, H.&T.C.R.R. Sur. Pits.

Erath County

Wayne Chandler's No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 4,930 ft.

T. Gray's No. 1 C. Young Hrs., NW cor. of Stephen Smith Sur., Abst. 682. S.D.O. 89 ft.

T. G. Jackson No. 1 J. W. Taylor, Prater Sur., Abst. 1029, 4 mi. NE of Desdemona. S.D. csg. 2,400 ft.

J. F. Monissey et al's No. 1 R. J. Sikes, J. Hargrave Sur., 6 mi. N of Stephenville; 5,000-ft. test. S.D.O. 330 ft.

Hamilton County

Wallace & Vickers' No. 1 C. C. Lund, J. P. Bailey Sur. 51. S.D.O. 3,790 ft.

Haskell County

K. N. Nowels' No. 1 M. S. Pardue, SW cor. Sec. 1, S.F.I.W. Sur., 4½ mi. east Stamford. Loc.

Jones County

Butler & Horne's No. 1 J. C. Thompson, Sec. 48, Blk. 18, T.&P. Sur. Fsg. 100 ft.

Keeler's No. 1 Radford, SE¼ Sec. 20, Blk. 4, H.&T.C.R.R. Sur. S.D.O. 1,800 ft.

Moutray-King Oil Co.'s No. 1 J. B. Rutledge, Subd. 33, Sec. 2, Blk. 20, T.&P. Sur. P.B.P. 1,937 ft.

A. H. Tarver No. 1 A. S. Barkley, Sec. 54, Deaf and Dumb Asyl. Lds. Drlg. 5,375 ft.

Ungren & Frazier and Hedrick Oil Co.'s No. 1 H. F. Lewis, NW cor. Sec. 6, Subd. 7, W. C. Walker Sur. Loc.

Nolan County

Green & Owens' No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. Sat. from 5,135-38 ft.; 116 B.O. in 2 hrs.; est. 450 B.O. P.D.; tstg.

Plymouth Oil Co. No. 1 F. M. McClure, Sec. 49, Blk. 23, T.&P. Sur., 8,000-ft. test. Drlg. 4,600 ft.

Palo Pinto County

J. Jones' No. 1 R. H. Gauldin, NW cor. Sec. 1743, T.E.&L. Sur. S.D.O. 207 ft.

Parker County

Brown & Gardner Bros. No. 1 Gilbert, T.&P. Sur., Abst. 1958. S.D.O. 3,083 ft.

Shackelford County

Georgian Oil Corp.'s No. 1 Black ranch, C NE¼ of T.E.&L. Sur. No. 390, 10 miles NE of Albany, Ordovician test. Loc.

C. R. Schuster No. 1 L. E. DeWitt, Blk. 53, Univ. Lds. S.D. 3,040 ft.; wtr.

Stephens County

Geo. E. Fagg No. 1 Richardson, Sec. 5, Blk. 31, S.P.R.R. Sur.; 4,000-ft. test. Drlg. 3,065 ft.

T. G. Shaw, Tr.'s No. 1 S. P. Stroud, NW¼ of G. Newton Sur., Abst. 128, Sd. 2,597-2,600 ft.; pulling pipe 2,602 ft.

A. G. Swanson No. 1 Veale-Frost, Sec. 37, Blk. 8, T.P. Sur. Drlg. 4,190 ft.

Stonewall County

Shell Oil Co., Inc., No. 1 A. E. Smith, Sec. 143, Blk. 1, H.&T.C. Sur.; 6,000-ft. test. Drlg. 3,082 ft.

Taylor County

Bradford's No. 1 V. B. Reeves, NW¼ Sec. 28, B.A.L. Sur. Tstg. oil sd. 1,719-37 ft.; 41 bbl. hrly.

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Personal Paragraphs

J. J. MAUCINI, formerly district geologist for Continental Oil Co. in Wichita Falls, Tex., resigned last week to become a consulting geologist in the North Texas area. PETE MARTIN, assistant geologist for the past 6 years, succeeds him in the district office.

L. R. BRAMMER, who recently completed special work in the southern tier of states for Danciger Oil & Refineries, Inc., has resumed his former position in Tulsa as sales manager. V. B. EDWARDS, who was sales manager during Mr. Brammer's absence, will return to his former post in Minneapolis, Minn., as sales manager in that district, following a vacation.

J. R. MURPHY has been named to succeed the late J. N. Hunter as general superintendent of pipe lines for Gulf Refining Co., with offices in Tulsa. Mr. Murphy was Mr. Hunter's assistant.

E. G. HAMMERSCHMIDT, chief chemist of Texoma Natural Gas Co., Fritch, Tex., received the Beal medal, highest technical award in the gas industry, in recognition of his research papers.

H. R. BRIDGEMAN, representative of Anglo-Iranian Oil Co., Ltd., in the United States a few years ago, has been appointed to a post in the Ministry of Economic Warfare, according to word from London.

C. A. WILLIS, general sales manager for the western marketing division of the Cities Service Oil Co., was a Tulsa visitor this week, returning to his Chicago offices after spending several days in the Mid-Continent.

T. J. SULLIVAN, general manager of the manufacturing department, Gulf Oil Corp., Pittsburgh, Pa., spent several days last week in Port Arthur, Tex., where until recently he was located as general superintendent of Texas refineries.

JOHN R. SCHMITT has been elected vice president of Tiona Petroleum Co., Philadelphia, Pa. He was formerly treasurer of Alliance Oil Corp., New York. A. H. IRELAN, formerly manager of the lubricants department of Cities Service Oil Co., has succeeded Mr. Schmitt as vice president of Alliance.

LOY WILSON, formerly superintendent of O. C. Whitaker Co., Fort Worth, Tex., has gone into business for himself as a pipe-line contractor under the name of Superior Construction Co., with offices in the Kennedy Building, Tulsa.

DR. F. W. LEE, head of the geophysical section of the U. S. Geological Survey, delivered an address before the Fort Worth Geological Society at Texas Christian University in Fort Worth Worth, November 1. Dr. Lee, who was professor of electrical engineering and petroleum engineering at Harvard and later at Johns Hopkins University before becoming head and organizer of the geophysical branch of the U. S. Geological Survey, is delivering a series of lectures throughout Texas.

GEORGE A. RENARD, secretary of the National Association of Purchasing Agents, was the principal speaker at the seventh annual executives-night dinner meeting held recently by the Purchasing Agents Association of Tulsa. His subject was "From One P. A. to Another." Members had as guests one or more executives of the companies they represented.

VAUGHN C. MALEY, geologist for Humble Oil & Refining Co., Midland, Tex., was the speaker at the monthly meeting of the West Texas Geological Society held last week in Midland. He spoke on the extrusive igneous rocks of the Big Bend country. CARY P. BUTCHER, district geologist for Tide Water Associated Oil Co., in Midland, reviewed plans for the fall field trip to the central mineral region.

E. H. BUCKNER, Houston, Tex., oil man, has the distinction of seeing a herd of prehistoric elephants named after him. Mr. Buckner owns a block of land in Bee County, Texas, which a million or so years ago became the graveyard of bucktoothed mastodons, a species unknown until a short time ago, when fossil hunters began excavations. DR. E. H. SELLARDS, University of Texas director of the geological research project, has named the group "tetralophodon buckneri." W.P.A. excavators last week were removing the tenth skull found on the Buckner property. The tusks curve outward, instead of being straight. The beasts were about 16 ft. high, with 7-ft. tusks.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Production of crude oil in the United States in 1913 was 248,446,230 bbl., or 25,511,186 bbl. more than in 1912, says the U. S. Bureau of Mines. The average price of the oil was 95.4 cents per barrel.

The second Lakeview gusher in the Maricopa field in California has stopped flowing after 159 days, during which time it is estimated to have produced 4,000,000 bbl. of oil. The original gusher, completed in 1910, flowed 289 days and produced 8,000,000 bbl.

20 YEARS AGO

High cost of operating in Burkburnett, Tex.: Rig builders $16 to $24 a day; teamsters $15 a day for man and horses; truck owners earn $80 to $100 a day; added to which is the high cost of water, fuel, and pipe and $6 to $9 per foot for drilling.

Gilliland & Foster complete a 30,000-bbl. well in the Claiborne Parish field in Louisiana.

Texas Railroad Commission decrees that no officer or employe of the oil and gas department of the commission shall buy or sell leases, own stock in an oil or gas company, or otherwise be interested financially in the industry.

The announcement of the engagement of their daughter, Miss Ruth Wilson of Washington, D. C., to Col. Patrick J. Hurley, Tulsa oil man, is made by Admiral and Mrs. Henry D. Wilson.

10 YEARS AGO

Indian Territory Illuminating Oil Co.'s No. 1 Fuzzell, in the Oklahoma City field, flows 1,500 bbl. of oil in 15 minutes, or at the rate of 144,000 bbl. per day. It also produced gas at the rate of 60,000,000 cu. ft. per day.

O. D. ROBINSON, president, Republic Oil & Refining Co. in Pittsburgh, Pa., was a visitor at the company's offices in Houston, Tex., last week.

A. C. REEVES, formerly associated with Lake Refining Co., Gladewater, Tex., has been named sales manager of the Gladewater Refining Co.

MAURICE MIESSE, of Phillips Petroleum Co., has been transferred from Kentucky to Jackson, Miss., to scout developments in the latter territory.

F. L. WALLACE, assistant general refinery superintendent of Texas Co. at Port Arthur, Tex., has returned from a vacation trip to his former home in Indiana.

J. W. NEWTON, vice president and general manager of the refinery department for Magnolia Petroleum Co. in Beaumont, Tex., returned last week from an extended business trip in the East.

R. J. REDD, Shell Oil Co., Inc., Houston, Tex., has been promoted to assistant sales manager of the Texas district, succeeding R. L. WHITTEN, who was transferred to New Orleans as assistant sales manager in the Louisiana district.

C. C. HOGG, National Petroleum Co., Titusville, Pa., will discuss repressuring at a meeting of southwestern Pennsylvania, southeastern Ohio and West Virginia oil producers in Wheeling, W. Va., November 9 under auspices of the Pennsylvania Grade Crude Oil Association.

ANATOLE SAFONOR, formerly geologist for Ohio Oil Co., has taken a similar post with United Gas Public Service Co., Houston, Tex.

DAVID H. SEARS, assistant geologist of Shell Oil Co., Inc., in the San Joaquin Valley, has been transferred to the coastal division in the same capacity.

LELAND WINN, of Minden, La., formerly associated with the Standard Oil Co. in Venezuela, is leaving for service in Cairo, Egypt, with the same company.

H. R. BENNETT, production superintendent for Mills Bennett Production Co., Houston, Tex., returned last week from a vacation trip to the Laredo district.

CHESTER H. LUNDT, engineer for Humble Oil & Refining Co. in Houston, Tex., has been appointed to the board of directors of the Houston Engineers Club.

FREDERICK G. CLAPP, consulting geologist, New York, accompanied by E. Gardner Clapp, is making an inspection of the Mid-Continent fields to cover several weeks.

NEAL H. ANDERSON, former California oil umpire and independent producer, is one of the organizers of Asphalt Petroleum Co., which will drill a well on the Bryant lease in the Seal Beach field.

JOHN E. DICKSON, Chicago representative for the Pennsylvania Grade Crude Oil Association, has resigned to join the sales department of Wolverine-Empire Refining Co. He is being replaced by J. H. BEGLEY, of Boston, New England representative, who in turn is succeeded by R. W. YOUNG, now of the Quaker State Oil Refining Corp., Oil City, Pa.

Starts Them Off Right

The fact that Arkansas' flush oil fields are developed and produced in an orderly manner is something for which the state owes its thanks largely to A. M. Crowell, administrative officer of the Arkansas Oil and Gas Commission. He gets these fields started off right.

A. M. CROWELL

Mr. Crowell entered the oil and gas industry 13 years ago as a student engineer with Empire Oil & Refining Co., Bartlesville, Okla. He had been educated as a mechanical engineer at the University of North Carolina, following that with graduate work at the University of Oklahoma and University of Kansas. Next he was employed by Del Roy Oil Co. in California as a production engineer, leaving in 1932 to join Shamrock Oil & Gas Co., in Amarillo, Tex. In 1933 he became chief gas engineer for the Oil and Gas Division of the Texas Railroad Commission, and 3 years later he was promoted to supervisor of field engineering and research. He left the commission in 1938 to enter the joint service of the old Arkansas Board of Conservation and the Oil Operators Committee. He was technical adviser in the preparation of the state's conservation law and was retained as administrative officer by the Arkansas Oil and Gas Commission created by the act.

Fishing—creek or deep sea—is Mr. Crowell's favorite diversion. He is 35 and married. His chief interest centers in practical application of conservation and controlled-production principles, and he has written important articles on that and related subjects.

ROY B. McKEE, for 18 years manager of refinery sales for Freedom Oil Works Co., Freedom, Pa., has been elected vice president.

T. A. CARLTON, Houston, Tex., independent operator, has formed Houston Drilling Corp. with offices in the Esperson Building.

R. P. PRINCE, of Prince Brothers, Gladewater, Tex., and Mrs. Prince are back from a 5-week hunt in Arizona and New Mexico in which they bagged their limits of game.

J. J. WAGGONER, JR., of Plain Dealing, La., was elected chairman of the Bossier Parish division of the Louisiana Petroleum Industries Committee at a recent meeting in Bossier City.

ROBERT P. MANGOLD and RICHARD C. McCURDY, exploitation engineers for Shell Oil Co., Inc., have changed places, the former moving from the coastal district at Ventura to Los Angeles and the latter leaving the Los Angeles office and moving to Ventura.

GEORGE ARMISTEAD, JR., has been made assistant to the manager of Republic Oil Refining Co. and is stationed at the Texas City, Tex., plant. Mr. Armistead resigned as process engineer for Gasoline Products Co. in New York to take his new post. He graduated from the petroleum engineering school at Texas A. & M. College.

GEORGE F. HAUSER, district civil engineer for Standard of Venezuela at Caripito, Venezuela, and Mrs. Hauser are visiting in Amarillo, Tex. This is their first trip to the States in 4 years. Mr. Hauser, who has been in Venezuela with Standard for 11 years, reported oil production of that country has doubled since the outbreak of hostilities in Europe.

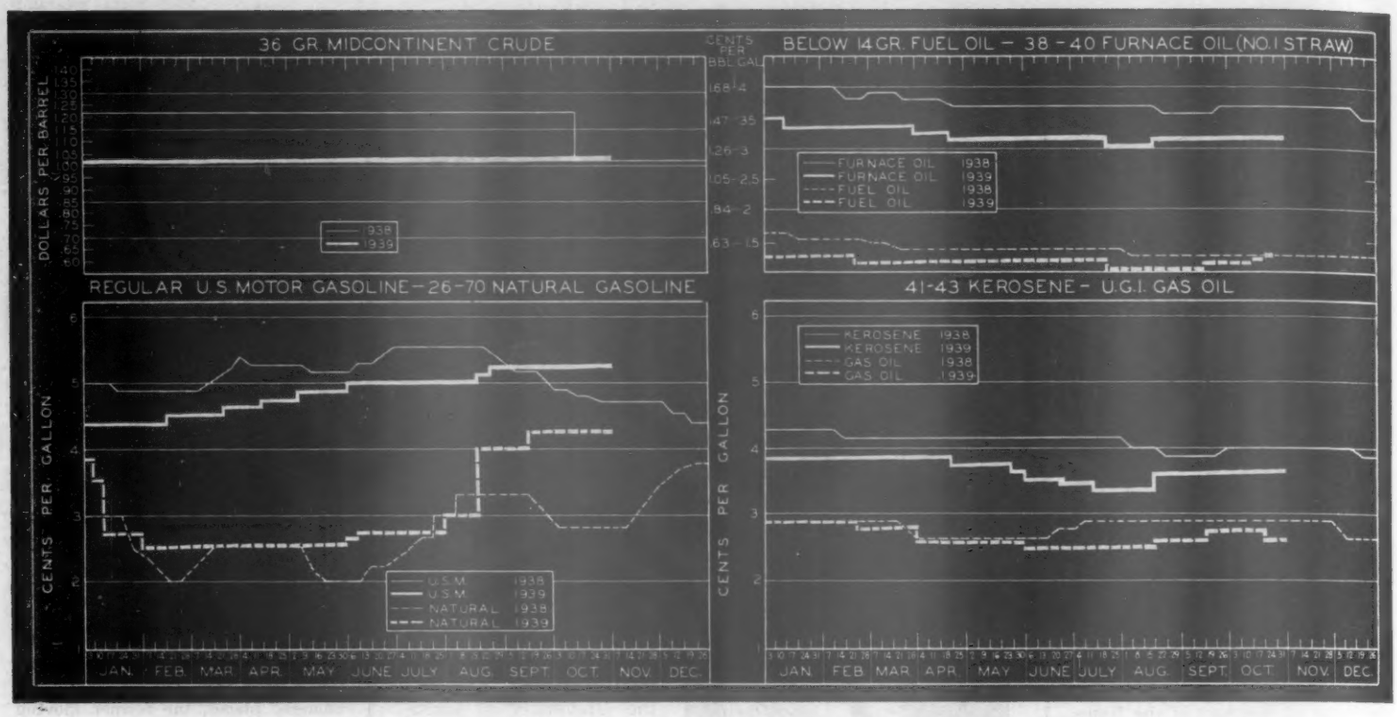
JERRY SADLER, member of the Railroad Commission of Texas, Austin, was guest of honor and chief speaker at the annual banquet of the North Permian Basin Oil and Gas Association held last week in Lubbock, Tex. RALPH V. OBERHOLTZER, Seagraves, president of the organization, presided.

Shifts: MARK H. O'CONELL, geologist Cities Service Oil Co., from Columbus, Tex., to Amite, La.; MELVIN EVANS, engineer Phillips Petroleum Co., from League City, Tex., to Pasadena, Tex.; L. E. BOTKIN, superintendent Illinois Oil Co., from Coahoma, Tex., to Artesia, N. M.; C. W. ADAMS, contractor, C. W. Adams Servicing Co., from Paw Paw, Mich., to St. Elmo, Ill.; C. F. FREE, superintendent Cargray Corp., from Pampa, Tex., to White Deer, Tex.; WARD BOTSFORD, engineer Pure Oil Co., from Evanston, Ill., to Winnetka, Ill.; CHARLES A. DILLARD, superintendent Carter Oil Co., from Owensboro, Ky., to Effingham, Ill.; HARLEY LUCAS, engineer National Refining Co., from Coffeyville, Kans., to Dearing, Kans.; R. H. LUDEMAN, purchasing agent Anglo-American Purchasing Co., Inc., from New York to Larchmont, N. Y.; DAVID C. HARRELL, geologist Carter Oil Co., from Mandan, N. D., to Jackson, Miss.; GEORGE H. BELL, superintendent Smith Petroleum Co., from Gladwin, Mich., to Bay City, Mich.; IRVING H. WHEATCROFT, from London, England, to Toronto, Canada; E. A. HALDI, engineer, from Paris, France, to Zurich, Switzerland; MARCIN A. HAJDU, from Lwow, Poland, to Budapest, Hungary; FRANZ ROTH, engineer, from Brno, Czechoslovakia, to Whiteleafe, Surrey, England; RAYMOND B. KELLY, engineer Pure Oil Co., from Fort Worth, Tex., to Olney, Ill.; S. P. WEATHERBY, Seismograph Service Corp., from Flora, Ill., to Yazoo City, Miss.; J. B. WHISENANT, manager Whisenant & Trenchard, from Mattoon, Ill., to Evansville, Ind.; R. W. McILVAIN, JR., manager Pure Oil Co., from Olney, Ill., to Fort Worth, Tex.; J. W. CALWELL, engineer Stanolind Oil & Gas Co., from Hays, Kans., to Russell, Kans.; JOHN CUSHING, engineer Foster Petroleum Corp., from Bartlesville, Okla., to Olmstead, Ohio; CHARLES W. CRADER, president Crader Oil & Gas Co., from Oklahoma City, Okla., to Jackson, Mich.

R. C. ALDEN, Bartlesville, Okla., research director for Phillips Petroleum Co., has been moved to his home following an appendectomy.

HENRY A. LEY, vice president of Southern Cross Oil Co., San Antonio, Tex., and president of the American Association of Petroleum Geologists, started recently on a speaking tour which was to include the geological societies of Dallas, Tex.; Tulsa; Mattoon, Ill.; New York; Washington, D. C.; Charleston, W. Va.; Lawrence, Kans.; Wichita, Kans., and Los Angeles, Calif., reaching the last-named city November 9.

DORSEY HAGER, geologist, author, and technical advisor of the Illinois Oil Producers Equity Association, Centralia, Ill., was scheduled to speak before two district meetings of the Illinois State Bar Association this week, one in McLeansboro on Monday and the other in Taylorville on Tuesday. RALPH HORWEEN, of Chicago, chairman of the bar association's section on oil and gas law, was also to speak, both men discussing the question of oil regulatory legislation. Mr. Hager was expected to oppose regulatory legislation.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Another Leap in Wax Saves Market in Group 3 Area From Lifeless Week

By T. F. SMILEY

ANOTHER leap in the price of wax provided a bit of life in what otherwise was a spiritless week in the Group 3 market. From a range of 5¼ to 5½ cents for white crude scale in the preceding week, quotations sprang a full half cent. It was said that no manufacturers were considering any offers under 5¾ cents, and some were so thoroughly sold up that they were lukewarm about parting with material at any figure in the spot market, preferring to take care of long-time contract customers first. About 75 per cent of the smashing business being done in wax is with oversea buyers.

Petrolatum Soars Too

Little petrolatum is produced for the market by Mid-Continent refiners, but for the limited output originating in that area there has been a mounting demand, closely paralleling that for wax, with quotations rising accordingly. This product, which is the amorphous wax thrown out by the centrifuge machine in making bright stock, is not put on the market by all lubricant manufacturers, some of whom use it instead as cracking stock for gasoline.

Although the lubricating-oil market revealed only minor changes, evidences of its growing strength were seen in the latest report of the Western Petroleum Refiners Association. September shipments of bright stock by the 12 reporting companies in the Mid-Continent territory were 196,191 bbl. This was a gain of 81.8 per cent over shipments in the corresponding month of 1938 and 40.9 per cent over those in August 1939. At the opening of October there was 64 days' supply, a drop of 18 days' supply in 1 month. Inventories decreased 58,319 bbl., or 17.3 per cent, during September.

September shipments of viscous neutrals aggregated 204,234 bbl., a gain of 37 per cent over shipments in September 1938 and 31 per cent over those in August 1939. Days' supply dropped from 33 to 25. Inventories declined 33,820 bbl., or 20.5 per cent, during September.

Refiners expected withdrawals of neutrals and bright stock during October to be even larger than those recorded in September.

Refined Oil Market Barometer

Wax market increasingly tight, with prices up and likely to go higher. Softness of gasoline at Gulf and some interior points compensated for by slight improvement on North Atlantic seaboard. Natural gasoline somewhat easier. Furnace oils showing a little more life, but still laggard. Lubricating oils continue strong at unchanged prices. Heavy industrial fuel gaining.

MID-CONTINENT. Wax extremely tight. Gasoline lifeless. Naturals inclined to softness.

EAST COAST. Gasoline slightly improved. Fuel oil, kerosene, and wax increasingly firm.

GULF COAST. Motor fuels soft. All grades of neutrals strong, with prices up.

CALIFORNIA. Export gasoline up. General market awaiting vote on oil-control bill.

PENNSYLVANIA. Strength of lubricating oils holding well. Wax makes further gains.

CHICAGO. Gasoline steady. Heavy industrial fuels firm. Heating oils lack life.

Gasoline, which had been showing signs of softness, gave no evidence of improvement. Any uneasiness in this division, however, did not appear to be seriously threatening the current price structure. Weakness observable in East Texas recently became more pronounced in the past week. Gasoline moved by truck from refineries in that area caused a break of 2 cents in retail prices in Dallas, Tex., in the past week. Much of the material is said to be eligible for state tenders only, with the result that it must seek local markets. Contributing also to the softness of the East Texas market, refiners said, was the increased proportion of the state's crude allowable allocated to that area.

Naturals Less Robust

Natural gasoline was not so robust as it had been in recent weeks and the 26-70 grade was available in Texas at 4 cents, a decline of a quarter cent from the price that had prevailed since mid-September. Although 4¼ continued to be quoted in Oklahoma, it was recognized that softening of the Texas market might extend to its sister state.

Additional natural-gasoline inquiries, export and coastwise, were received in the past week, and good business, both domestic and foreign, has been booked for November. Movement of boats in export trade continued uncertain, though a little improvement was noted. Spottiness in the market was ascribed chiefly to the erratic export business.

Sunshiny weather throughout much of the Middle West has acted as a damper on sales of furnace oils, although buying in this division was picking up a little in the past week.

Gasoline Prices Slightly Firmer on North Atlantic Seaboard

By H. STANLEY NORMAN

NEW YORK, Oct. 31.—Motor-fuel prices in the northeastern section moved into slightly higher ground last week and appear to be reasonably firm at current levels, in contrast with a slightly softer tone on the Gulf Coast. The changed relationship between motor-fuel markets on the Gulf Coast and those along the North Atlantic seaboard is caused by the September rise in tanker charter rates.

Although boat rates appear to be 1 to 3 cents per barrel lower than the mid-October highs for the coastwise run, charter prices currently are 10 to 12 cents per barrel higher than at the start of September. In view of the fact that it has not been necessary for some suppliers to replace September 1 motor-fuel stocks until the present time, the greater transportation cost is now exerting its full influence on the market in Philadelphia, New York, and Boston.

The slight softening of boat rates in the past week precipitated a rush of activity in the charter market. Numerous suppliers on the North Atlantic Coast had delayed purchases in the open market and held up shipping instructions to refinery sources as long as possible, seeking a break in the tanker charter rates. Boat owners have lowered somewhat their estimates of potential transportation demand made when the European war was declared.

Upwards of 20 tankers were reported chartered last week, mostly for coastwise service from the Gulf to North Atlantic ports, but three or four were fixed in trade with Japan, Argentina, Holland, Norway, and Italy. Most of the coastwise charters were made on a basis of 29 cents for gasoline, 31 cents for kerosene, and 33 cents for furnace oil. Before last week's softening of the charter market the rates asked ranged from 32 cents for gasoline up to 36 cents for fuel oil. Development of the softer charter market brought a rush of owners to place idle boats in service before further recessions from the preceding week's highs developed.

Practically all New York suppliers are quoting 6¾ cents per gallon for 65-octane motor fuel in tank cars and 6½ cents in barges. There is a limited amount of material available in tank cars at the barge price of 6⅝ cents, but it is mostly gasoline held in storage before the September climb in tanker rates.

The advance in consumer tank-car gasoline prices posted October 24 by Socony-Vacuum Oil Co., Inc., 0.1 cent per gallon in some areas and 0.2 cent in others, has been supported from most sides.

Consumption in this region has held surprisingly near summer levels. A sharper drop is expected in most quarters with the close of New York World Fair for the season today, and another slump will be felt at the close of the football season.

The small tanker chartered for the Gulf-to-Italy run in November was fixed at a rate of $9 per ton, and a vessel for service between Aruba and Holland brought $10 per ton. A boat was chartered at $7.50 per ton for November loading in Venezuela and delivery in Italy.

Domestic fuel oil, kerosene, and wax featured the past week's refinery market in this territory. Although the fall season has been mild in much of it burner operation has been necessary on most days this month as far south as Washington. Most New England areas have required burner operation for 6 weeks or longer and at rates substantially higher than in the vicinity of New York.

Most suppliers are quoting No. 2 fuel oil in tank cars at 4.75 cents per gallon, although some open-market trading at 4.6 cents is reported in the more depressed territories. Tank-wagon prices for No. 2 fuel oil range from 6 to 6¾ cents. Most of the metropolitan New York customers are currently served at 6½ cents, which in some instances is the top of the over-the-winter contracts written last summer and spring.

Bunker C fuel oil is holding firm at $1.15 per barrel. Concern is expressed in some quarters over predictions that bunkering business in this country will suffer if the proposed neutrality amendment is adopted by Congress in its present form. Northeastern shipping interests are waging a battle to liberalize the restrictions imposed by the neutrality amendment on American commerce.

Residual fuels for industrial-plant consumption are in firm demand, and consumption is holding the levels reached shortly after war was declared. Reports from steel mills in Pennsylvania and the Middle West indicate that practically all plants are well fortified with substantial backlog orders and that near-capacity production will be continued well into the middle of 1940. Consequently, fuel oil consumption by steel producers and allied industries may be expected to continue at current levels for at least 6 months. Extension beyond the middle of 1940 of the current high rate of steel production depends largely on the action taken by Washington and upon the development of a concentrated campaign by the belligerents in Europe.

Crude scale wax is generally quoted at 5.5 cents in the New York export market and suppliers are not anxious sellers even at this figure. European munition factories are calling on United States refiners liberally for their wax requirements and prices are not particularly important to this trade. Pennsylvania lubricating oils were unchanged last week although market gains of the past 6 weeks are well maintained. Export inquiry remains brisk but the difficulty of obtaining shipping space on cargo vessels and tankers for trans-Atlantic movement has not been relieved.

Gulf Coast Markets

HOUSTON, Tex., Oct. 31.—Rumors circulated here the past week that the British and French governments now are prepared to make substantial shipments of gasoline from the Gulf Coast and that convoys have been sent to this country for that purpose are not substantiated by fact. No important movement of material to those countries has been reported, and export shipments to neutrals were little more than normal. Italian and Greek ports are the listed destinations of most tankers now clearing from Gulf terminals.

Reflecting the continued failure of new export business to materialize, motor fuels remained soggy. Available supplies continued to increase and a generally bearish tone permeated the market. Actual quotations have shown a tendency to level off, although in the absence of important sales to back up the quotations, sellers intimate quotations might be shaded further for immediate shipment.

Advances of a quarter to a half cent in all grades of coastal neutrals proved the outstanding development in Gulf Coast markets. These applied to all material being moved on contract, although some buyers reported still being able to obtain material on the open market at pre-

(Continued on Page 105)

A. P. I. Weekly Refinery Statistics

Week Ended October 28, 1939

	Capacity reporting (per cent	Daily crude runs (bbl.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	588,000	18,511,000	13,008,000
Appalachian	85.9	107,000	2,611,000	641,000
Indiana, Illinois, and Kentucky	90.2	505,000	10,771,000	6,737,000
Oklahoma, Kansas, and Missouri	81.6	266,000	6,129,000	4,520,000
Inland Texas	50.3	112,000	1,495,000	2,277,000
Texas Gulf	90.0	853,000	9,539,000	13,269,000
Louisiana Gulf	97.8	147,000	2,554,000	3,030,000
North Louisiana and Arkansas	55.0	38,000	324,000	887,000
Rocky Mountains	54.2	39,000	991,000	543,000
California	90.0	508,000	14,635,000	92,692,000
Total reported	86.2	3,163,000	67,560,000	137,604,000
Estimated unreported	.....	350,000	5,100,000	3,250,000
*Estimated total	.....	3,513,000	72,660,000	140,854,000
*Estimated total previous week	.....	3,650,000	72,122,000	141,496,000
*October 29, 1938	.....	3,251,000	69,259,000	153,355,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ending October 21, 1939	229,127,000 barrels
Week ending October 14, 1939	229,870,000 barrels
Week ending October 22, 1938	276,652,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of October 31, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline: Tank wag.	Gasoline: Dlr.	Gasoline: Inc. tax	Kero. tank wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	15.1	12.1	4.0	8.5
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	13.6	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	9.4
Minneapolis	16.5	15.0	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.0
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	13.6	12.1	4.0	7.6
Grand Rapids	13.5	12.0	4.0	9.7
Saginaw	14.8	13.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†10.7
South Bend	16.8	15.3	5.0	†10.0
Fargo, N. D.	17.7	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	12.9	4.0	7.9
Wichita, Kans.	13.3	10.6	4.0	7.4

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective September 18, 1939, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gal., 9 cents; 100-149 gal., 8 cents; 150 gal. and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-149 gal., 8.25 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex Grade A, 1-399 gal., 5.25 cents; 400 gal. and over, 4.25 cents. Stanolex Grade B, 1-799 gal., 5.25 cents; 800 gal. and over, 4.25 cents. Stanolex Grade C, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank-wag. cons'r.	Gasoline: Divided dlr.	Gasoline: Inc. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Cons'r. tank car	Gasoline: Dlr. tank wag.	Gasoline: Inc. tax	Kero. tank wag.
Atl'tic City, N. J.	11.6	12.7	4.0	7.60
Newark	11.6	12.7	4.0	7.60
Annapolis, Md.	13.35	14.35	5.0	9.5
Baltimore	12.75	13.75	5.0	7.0
Cumberland	14.15	16.15	5.0	10.0
Wash'gton, D. C.	11.00	12.0	3.0	9.5
Danville, Va.	14.95	17.45	6.0	12.9
Norfolk	13.75	16.25	6.0	10.0
Petersburg	14.05	16.55	6.0	11.7
Richmond	14.05	16.55	6.0	10.7
Roanoke	15.25	17.75	6.0	11.0
Charles'n, W. Va.	14.55	17.05	6.0	12.6
Parkersburg	13.85	15.35	6.0	11.2
Wheeling	14.85	16.75	6.0	12.2
Charlotte, N. C.	16.90	18.40	7.0	11.8
Hickory	17.45	18.95	7.0	12.3
Mt. Airy	17.30	18.80	7.0	12.2
Raleigh	16.65	18.15	7.0	11.5
Salisbury	16.95	18.45	7.0	11.9
Charleston, S. C.	14.75	17.25	7.0	10.6
Columbia	15.60	18.10	7.0	11.5
Spartanburg	16.30	18.80	7.0	12.2

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less .5 cent per gallon. The above policy also applies in South Carolina effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gal. or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Cons'r. tank wag.	Gasoline: Net dlr.	Gasoline: Inc. tax	Kero. tank wag.
Atlanta, Ga.	20.0	17.0	7.0	10.0
Augusta	20.5	17.5	7.0	10.0
Macon	21.0	18.0	7.0	10.5
Savannah	19.5	16.5	7.0	9.0
Birmingham, Ala.	21.5	18.5	8.0	9.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	22.5	19.5	9.0	11.0
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	19.5	16.5	7.0	9.5
Jacksonville, Fla.	19.0	16.0	8.0	8.5
Miami	19.5	16.5	8.0	7.0
Pensacola	21.5	18.5	9.0	8.5
Tampa	20.5	17.5	8.0	8.5
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	18.0	15.0	6.0	9.5
Louisville	18.5	15.5	6.0	9.0
Paducah	18.5	15.5	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline: Cons'r. tank car	Gasoline: Dlr. tank wag.	Gasoline: Inc. tax	Kero. tank wag.
Philadelphia, Pa.	12.0	13.5	5.0	10.0
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	12.5	14.0	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	13.0	14.5	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.		14.0	5.0	10.5
Wilmington		13.5	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon.

*Voluntary discount of 1 cent allowed to dealers only.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline: Cons'r. tank car	Gasoline: Dlr. tank wag.	Gasoline: Inc. tax	Kero. tank wag.
Albany	12.5	14.6	5.0	7.80
*Met. N. Y.:				
Manhat., Bronx	12.6	13.4	5.0	8.00
Queens, Br'klyn	12.6	13.4	5.0	8.00
Staten Island	12.6	13.4	5.0	8.00
Buffalo	13.1	14.5	5.0	7.70
Rochester	13.3	14.0	5.0	8.30
Syracuse	13.1	14.5	5.0	8.30
Boston	11.4	13.0	4.0	8.00
Portland, Me.	12.5	14.3	5.0	8.00
Manchester, N.H.	13.2	15.0	5.0	8.40
Burlington, Vt.	13.0	14.5	5.0	8.20
Springfield, Mass.	12.1	13.5	4.0	8.20
Worcester	12.0	13.5	4.0	8.20
Hartford, Conn.	11.8	13.3	4.0	7.90
New Haven	11.7	12.8	4.0	8.00
Providence, R. I.	11.4	13.3	4.0	8.00

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and New England points for tank-wagon delivery to the following: Annual purchases 10,000 gal. and under, tank-car price plus 2 cents per gallon; annual purchases 10,000 gal. up to 50,000 gal., tank-car price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gal., tank-car price plus 1 cent per gallon; annual purchases 200,000 gal. and over, tank-car price plus ¼ cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gal. receive a discount of ½ cent per gallon.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank truck	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	20.0	21.0	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	†13.75
Spokane	21.5	22.5	6.0	†16.75
Tacoma	20.0	21.0	6.0	†13.75

*Includes 5-cent state tax. †Includes 0.25-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Dlr.	Gasoline: Incl. tax	Kero. tank wag.
Denver, Colo.	15.5		5.0	11.5
Grand Junction	18.5		5.0	15.0
Pueblo	16.0		5.0	9.0
Casper, Wyo.	17.5		5.0	11.5
Cheyenne	15.5		5.0	13.0
Billings, Mont.	18.5		6.0	13.0
Butte	20.0		6.0	15.5
Great Falls	19.5		6.0	15.5
Helena	20.5		6.0	15.5
Salt Lake, Utah	17.5	17.5	5.0	16.0
Boise, Idaho	21.1	21.1	6.0	18.0
Twin Falls	21.1	21.1	6.0	18.0
Albu'que, N. M.	17.0	17.0	6.5	10.0
Roswell	15.5	15.5	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Cons. tank car	Gasoline: Dlr. tank wag.	Gasoline: Inc. tax	Kero. tank wag.
New Orleans, La.	15.25	17.75	8.0	†11.0
Baton Rouge	15.25	17.75	8.0	‡10.5
Alexandria	15.25	17.75	8.0	‡12.5
Lafayette	15.00	18.00	8.0	‡11.0
Lake Charles	15.25	17.75	8.0	‡12.5
Shreveport	14.00	16.50	8.0	‡11.0
Knoxville, Tenn.	18.50	21.00	8.0	13.0
Memphis	16.50	19.00	8.0	11.0
Chattanooga	18.00	20.00	8.0	12.0
Nashville	17.50	20.00	8.0	11.0
Bristol	18.75	20.00	8.0	13.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline: Tank wag.	Gasoline: Dlr.	Gasoline: Inc. tax	Kero. tank wag.
Omaha	16.9	15.4	6.0	9.8
McCook	16.5	16.2	6.0	9.0
Norfolk	17.3	15.8	6.0	9.5
North Platte	17.8	16.3	6.0	10.7
Scottsbluff	18.5	15.5	6.0	11.4

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline: Tank-wg. dlr.	Gasoline: Includes tax	Kero. tank wag.
Texarkana, Ark.	14.0	5.0	8.0
Fort Smith	14.5	5.0	7.5
Little Rock	17.25	7.5	8.0
Muskogee, Okla.	12.0	5.0	7.0
Oklahoma City	11.0	5.0	6.5
Tulsa	12.0	5.0	7.5

The tank-wagon price is the price to all classes of trade.

Texas

	Gasoline: Tank wag.	Gasoline: Serv. sta.	Gasoline: Inc. tax	Kero. tank wag.
Dallas, Tex.	12.0	16.0	5.0	7.0
Fort Worth	15.0	19.0	5.0	8.0
Houston	14.0	18.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank wag.	Inc. tax	Kero. tank wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	23.0	8.0	15.5
Toronto, Ont.	23.5	8.0	16.0
Hamilton, Ont.	23.5	8.0	16.0
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.9
Regina, Sask.	25.5	7.0	20.5
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.9
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	23.0	7.0	23.0

Tank-Wagon Changes

Continental Oil Co. October 6 advanced dealer gasoline .5 cent in Boise; October 17, reduced dealer gasoline 1 cent in Oklahoma City; October 18, reduced dealer gasoline 1 cent in Tulsa; October 19, reduced dealer gasoline 1 cent in Muskogee. October 19, advanced tank-wagon kerosene .5 in Tulsa.

Imperial Oil, Ltd., October 25 advanced tank-wagon gasoline and tank-wagon kerosene .5 cent in Halifax, St. John, and Montreal; October 26, reduced tank-wagon gasoline .5 cent in Regina, Edmonton, and Calgary and .3 cent in Saskatoon; same date, reduced tank-wagon kerosene 1.5 cents in Regina, 1.9 cents in Saskatoon, .5 cent in Edmonton, 1 cent in Calgary.

Socony-Vacuum Oil Co., Inc., October 24 advanced consumer tank-car gasoline in Albany, metropolitan New York, Syracuse, Portland, and Manchester .2 cent; Boston, Burlington, Springfield, Worcester, Hartford, New Haven, and Providence, .1 cent.

Standard Oil Co. of Louisiana October 26 reduced tank-wagon kerosene 1.5 cents in Knoxville.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of October 31, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:	
62 octane and below	.04½
63-66 octane	.04¾ .04⅞
67-69 octane	.04⅞ .05⅛
70-72 octane (regular)	.05⅛ .05⅜
60-62 400 grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.04⅞ .05⅛
70-72 octane (regular)	.05⅛ .05⅜
68-70 360	.05 .05⅛

NORTH TEXAS—

U. S. Motor grades:	
62 octane and below	.04½
63-66 octane	.04¾ .04⅞
67-69 octane	.04⅞ .05⅛
70-72 octane (regular)	.05⅛ .05⅜
60-62 400	.04½ .04⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:	
62 octane and below	.04⅝ .04¾
63-66 octane	.05 .05⅛
67-69 octane	.05⅛
70-72 octane (regular)	.05⅛ .05½

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:	
62 octane and below	.04⅞
67-69 octane	no quotations
70-72 octane (regular)	.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.05 .05⅛
70-72 octane (regular)	.05⅛ .05⅜
60-62 400 grades:	
62 octane and below	.04½ .04⅝
63-66 octane	.04¾ .04⅞
67-69 octane	.05 .05⅛
70-72 octane (regular)	.05⅛ .05⅜
68-70 360	.05 .05⅛

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor	.05
65 octane	.06½ .07
72-74 octane (regular)	.06½ .07

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¼ .08
58-60 400, 65 oct. and higher	.07¼ .09

EAST COAST (domestic)—

U. S. Motor, 65 and above:	
*New York (Bayonne)	.06½ .06⅝
Philadelphia	.06¼ .06⅜
Baltimore	.06¼ .06⅜
Charleston, S. C.	.06⅝ .07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:	
Below 60 octane	.05½ .05⅝
65-67 octane	.05⅝ .06
68-70 octane	.06 .06¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.04¼
Grade 18-55	.05⅛

NORTH TEXAS—

Grade 26-70	.04
Grade 18-55	.04¼

CALIFORNIA—

75-85 375-390	.05½ .06¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70	.04⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03⅛ .03⅝
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.03⅝ .03¾
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.03⅞ .04⅛

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅝ .03¾
42-44	.03⅝ .03⅞

NORTH TEXAS—

41-43	.03⅝ .03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03½ .03⅝

ARKANSAS (Ark. and N. La. del.)—

41-43	.03⅝

PENNSYLVANIA (Inland refineries)—

45	.04⅜ .05
46	.05 .05⅛
47	.05 .05¼

CHICAGO (Based on Group 3)—

41-43	.03⅝ .03¾
42-44	.03¾ .03⅞

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04⅜ .05⅝

NEW YORK (Bayonne, N. J.)—

41-43	.04⅞ .05

***GULF COAST (domestic)—**

41-43	.04½ .04⅝

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½ .03⅝
No. 1 prime white, 38-42	.03⅝
No. 1 straw, 38-40	.03¼ .03¼
No. 2 straw, 32-36	.03¼ .03¼
No. 2 dark, 32-36	.02¾ .02⅞
No. 3 zero to 15, 28-32	.02⅞ .03
No. 3, 15 and above, 28-32	.02⅝ .02¾

NORTH TEXAS—

No. 1 prime white, 38-42	.03¼ .03⅜
No. 1 straw, 38-40	.03⅛ .03¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03 .03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	no quotations

CHICAGO (Based on Group 3)—

Range oil	.03⅝ .03⅝
No. 1 prime white, 38-40	.03⅝ .03½
No. 1 straw, 38-40	.03¼ .03⅜
No. 2 straw, 32-36	.03⅛ .03¼
No. 2 dark, 32-36	.03 .03⅛
No. 3, zero to 15, 28-32	.03 .03⅛
No. 3, 15 and above, 28-32	.02⅜ .02⅝

NEW YORK (Bayonne, N. J.)—

*No. 1	.04⅝ .05
*No. 2	.04⅝ .04½
*No. 4	.04¼ .04½

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝ .02¾
No. 5, low pour point, 18-22	.70 .75
Below 14 fuel oil, industrial	.50 .55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝ .02¾
No. 5, low pour point, 18-22	.70 .75
Below 14 fuel oil, industrial	.50 .55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70 .75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝ .02⅞
No. 5, low pour point, 18-22	.70 .80
No. 5, 15 and above, 18-22	.60 .70
No. 6, low pour point, 10-16	.60 .70
No. 6, 15 and above, 10-16	.45 .50

PENNSYLVANIA (Inland refineries)—

36-40	.04⅛ .04½

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.30
24 plus diesel, per bbl.	1.00	1.30
24 plus diesel (bunkers)	1.30	1.40
12-16 (bunkers at tidewater)	.70	.90
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.60	.85
10-17 (high sulfur)	.50	.70
San Joaquin Valley:		
10-18 (tank cars)	.55	.75
24 plus diesel, per bbl.	1.00	1.25
San Francisco:		
24 plus diesel, per bbl.	1.45	1.50
24 plus diesel (bunkers)	1.55	1.60
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel	.04¼
43-47 diesel	.04
48-52 diesel	.04¼
53-57 diesel	.04½
58 and above diesel	.04¾
Bunker C (bulk cargoes)	.95 1.00
Bunker C (bunkers)	.95 1.00

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.04¼
28-30 diesel (lighterage 6¼c per bbl.)	1.75
28-30 diesel (tank cars)	.04¼
Bunker C (to ocean-going ships in N. Y. Harbor)	1.15
Industrial fuel (tank cars)	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25	.26
150-160 D, 0-10	.23
150-160 D, 15-25	.22
150-160 E, 15-25	.22
100-110 D, 0-10	.22
Steam-refined:	
600 dark green (untreated)	.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):	
10 pour point	.29 .33
15 pour point	.28 .32
25 pour point	.24½ .30
Steam refined:	
600	.13½ .17
650	.15 .20
600 flash	.15½ .20½
630 flash	.19 .23

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:	
150-3	.12
180-3	.13
180-4	.12½
200-3	.13½
200-4	.13
250-3	.14½
250-4	.14
280-3	.15½
280-4	.15
300-3½	.16
400-3½	.17
700-2½ paraffin oil	.06¾
15-25 pour point:	
200-3	.13
200-4	.12½
250-3	.14
250-4	.13½
280-3	.15
280-4	.14½

GULF COAST—

Pale oils:	
200-3	.07 .07½
300-3	.07¾ .08
500-3½	.08½ .09
750-3½	.09 .09½
1,200-3½	.09¾ .09⅞
2,000-4	.10
Red oils:	
200-5-6	.06¾ .07¼
300-5-6	.07½ .07⅞
500 5-6	.08¼ .08⅝
750	.08¾ .09¼
1,200-5-6	.09⅜ .09⅞

CALIFORNIA (moving to dom. market)—

Pale oils:	
100-2½-3	.07¼ .08
200-2½-3	.07¼ .08
300-2½-3	.07¼ .08
400-3-4	.07¼ .08
450-3-4	.07¼ .08
550-3-4	.09 .11
600-3-4	.09 .11
Red oils:	
200-4-5	.07¾ .08
300-5-6	.07¼ .08
350-5-6	.09¼ .11½
400-5-6	.09¼ .11½
450-5-6	.09¼ .11½
500-5-6	.09¼ .11½
600-5-6½	.09¼ .11½
700-6½ plus	.09¼ .11½
750-6½ plus	.09¼ .11½
900-6½ plus	.09¼ .11¼

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash	
Zero pour point	.32½
10 pour point	.31½
15 pour point	.30½
25 pour point	.23 .28
200 vis. at 70° F., 3 color:	
Zero pour point	.34½
10 pour point	.33½
15 pour point	.32½
25 pour point	.25 .30

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.0575 .0600

PENNSYLVANIA (Inland refineries)—

122-124 (A.m.p.) w.c. scale	.0575 .0600
124-126 (A.m.p.) w.c. scale	.0575 .0600

NEW YORK—

Wax in bags fully refined:	
123-125 (A.m.p.) wax	.0435
125-127 (A.m.p.) wax	.0455
128-130 (A.m.p.) wax	.0460
130-132 (A.m.p.) wax	.0485
133-135 (A.m.p.) wax	.0515
135-137 (A.m.p.) wax	.0540
Crude scale:	
124-126 (A.m.p.) w.s.	.0550
124-126 (A.m.p.) y.s.	.0525
Petrolatum in barrels, carload lots:	
Dark green	.02 .02¼
Amber	.02⅜ .02½
Extra amber	.02⅝ .02¾
Lily white	.05¼ .05¼
Snow white	.06¼ .06¼
Cream	.04¼ .04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05 .05¼
60-62 400	.05½ .06
65 octane	.06¼ .06½
68 octane	.06¾ .07
70 octane	.07 .07½

LOS ANGELES—

U. S. Motor grades:	
55-65 octane	.05 .05¼
65-69 octane	.05½ .06
Above 69 octane	.06 .06¼

KEROSENE

GULF COAST—

41-43 prime white	.05¼
41-43 water white	.05¼

LOS ANGELES—

41-43 water white	.05 .05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s) in bbls.—

Cylinder stocks:	
600 S.R. unfiltered	.25 .26½
650 S.R. unfiltered	.27 .28½
600 flash, S.R.	.28 .30½
630 flash, S.R.	.30 .34
Bright stock:	
8 color	.40 .42

NEUTRAL OIL

200-3 color	.38 .43
150-3 color	.37 .40

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 A.m.p.	.0435
125-127 A.m.p.	.0455
128-130 A.m.p.	.0460
133-135 A.m.p.	.0515
135-137 A.m.p.	.0540
Crude scale:	
122-124 w.s.	.0550
124-126 w.s.	.0550
122-124 y.s.	.0525
124-126 y.s.	.0525

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Sinclair Prairie Oil Marketing Co. October 2, 1939. DeSoto Pipe Line October 2, 1939. Cities Service Co. October 5, 1939. Shell Oil, Inc., October 5, 1939.
Van, Tex. (Oct. 11, 1938)* $0.93
Talco, Tex. (Oct. 2, 1939)* ..... .65
Rodessa, Tex. .....
See North Louisiana gravity schedule
Cass and Panola counties, Texas .....
See note below
Altus and Tipton† ..... See note below
Cayuga, Tex. (Oct. 2, 1939) $0.78
Clay Creek, Tex. ..... .85

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.

Cass and Panola counties, Texas, effective October 12, 1938, by Magnolia Petroleum Co., same as North Louisiana prices in Column 5 in gravity schedule.

Altus and Tipton, Oklahoma, starting at below 25° at 71 cents, 2-cent spread to 40° and above at $1.03. Cayuga posted by Pan American Pipe Line Co. Clay Creek by Sun Oil Co.

West Texas

See gravity table.
Fisher County, Texas (Apr. 1, 1939) .....
See note below
Pecos County (Oct. 11, 1938)* $0.78
Pecos shallow (Oct. 11, 1938)† ..... .65

*Shell Oil Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Oil Co.

Fisher County, Texas, by Shell Oil Co., Inc., below 25°, 68 cents; 25°, 70 cents, with 2-cent spread to 40° and over at $1.

North Louisiana and Arkansas

Shreveport, La. (Sept. 7, 1939) .. $1.05
See note below
Smackover, Ark. (Oct. 5, 1938)* .... .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand (Sept. 13, 1939) .79
Schuler, Reynolds sand (Sept. 13, 1939) ..... .91
Tullos and Urania $0.89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Lisbon, La. (Apr. 29, 1939) .....
See note below
Atlanta, Ark. (Sept. 13, 1939) ... .93
Magnolia, Ark. (Sept. 13, 1939) .. .93
University, La. (Sept. 11, 1939) ..
..... See note below

*Smackover posted by Standard Oil Co. of Louisiana, Oct. 5, 1938; by Magnolia Petroleum Co., Oct. 12; by Gulf Refining Co., Oct. 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

The above Schuler, Atlanta, and Magnolia, Arkansas, flat prices posted by Lion Oil Refining Co. Shreveport flat prices posted by Caddo Crude Oil Purchasing Co. and Atlas Oil Corp.

Buckner, Magnolia, and Village, Arkansas prices effective Sept. 13, 1939, by Standard Oil Co. of Louisiana, start at below 25° at 63 cents, with 2 cents added for each degree up to 40 and over at 95 cents.

Effective Sept. 7, 1939, Standard Oil Co. of Louisiana posted gravity prices in Shreveport field beginning at below 25°, 73 cents; 25-25.9°, 75 cents, with 2 cents added for each degree up to 40 and over at $1.05.

In the Lisbon, Louisiana, field, effective Sept. 14, 1939, Gulf Refining Co. and Caddo Crude Oil Purchasing Co. posted 27-27.9°, 66 cents, with 2 cents added for each degree up to 35 and over at 82 cents.

In the Baton Rouge (University) field, Louisiana, effective Sept. 11, 1939, Standard Oil Co. of Louisiana posted below 20° 79 cents, with 3 cents added for each degree upward to 26-26.9° at $1, and then 2 cents added for each degree up to 40 and over at $1.28.

Southwest Texas

Salt Creek, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* $0.96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Jim Wells County (Oct. 2, 1939)* . 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† ..... .90
Mirando (Oct. 12, 1938)† .....
Government Wells (Oct. 13, 1938) .....
See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20° at 77 cents, 3-cent spread to 24°-24.9° at 89 cents.

Gulf Coast

Sea Breeze, Willow Slough, and LaBelle, Tex. (Sept. 14, 1939)*** $1.10
Conroe, Tex. (Oct. 11, 1938)* 1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)† ..... See note below
Gibson, La. (Oct. 11, 1938)† $1.04
Garden Island, La. (Oct. 12, 1938)‡ .. 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ 1.14
Schwab, Polk County (Feb. 20, 1939) 1.00
Hardin, Tex. (Sept. 14, 1939)* $1.10
Tepetate, La. (Oct. 11, 1938)§ 1.03
Villa Platte, La. (Oct. 11, 1938)§ 1.03
Abbeville, La. (Jan. 1, 1939)§ .....
See note below
Bosco, La. (Dec. 3, 1938)¶ $0.93
Creole, La. (Oct. 13, 1938)¶ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)¶ .... See note below
Vinton, Edgerly, Starks, Hackberry, Timballer Bay, Quarantine Bay and Grand Bay, La. (Oct. 2, 1939)** .....
Long Lake, Tex. (Oct. 13, 1938)** .. $1.08
Segno and Wing (Oct. 2, 1939)** .....
See note below
Livington (Oct. 11, 1938)† $1.10
Gibson, La. (Oct. 11, 1938)† 1.04
Evangeline, La. (July 7, 1939) $0.98

*Humble Oil & Refining Co. †Shell Oil Co., Inc. ‡Texas Co. §Continental Oil Co. ¶Pure Oil Co. ¶Magnolia Petroleum Co. **Gulf Refining Co. ***Sun Oil Co. Hardin prices by Humble and Sun companies.

Black Bayou, etc., starts at below 20° at 79 cents; 20°-20.9°, 81 cents; 21°-21.9°, 83 cents; then a 3-cent spread to 26°-26.9°, 98 cents; then a 2-cent spread to 40° and over at $1.14. Abbeville starts at below 36°, 92 cents, 2-cent spread to 40° and over at $1.02. Gueydan, etc., starts below 20°, 79 cents, 3-cent spread to 26°-26.9° at $1, and 2-cent spread to 40° and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 20°, 86 cents, 2-cent spread to 34° and above at $1.16. Schwab posted by Shell Oil Co., Inc. Evangeline, La., posted by Standard Oil Co. of Louisiana.

Hackberry, East and West, effective October 2, 1939, by Stanolind Oil & Gas Co. Below 20 gravity 86 cents, 2 cents added for each degree up to 34° and over at $1.16.

In the Bunkie and Eola pools in Louisiana, effective October 23, 1939, by

Crude Prices by Gravities

	Oklahoma and Kansas 1	Oklahoma and Kansas 2	Oklahoma and Kansas 3	North and Central Texas 4	Louisiana and Arkansas 5	East Central Texas 6	Gray County, Texas 7	Carson and Hutchinson Counties Texas 8	West Texas, and Lea County, N. M. 9	Raccoon, Satsuma, and Tomball, Texas 10	Gulf Coast 11	Anahuac, Dickinson, Texas 12	Refugio, Texas 13	Mirando-Duval, Beaumont-West Beaumont, Texas 14	Golden Meadows, Louisiana 15	Lockport, Iowa, Cameron Meadows, Louisiana 16	Bunkie and Eola, Louisiana 17	Artesia, Jackson, Maljamar, N. M. 18
Below 18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	$.74	...	...
18-18.9	...	...	...	...	...	...	...	...	$.53	...	...	...	...	...	...	.76	...	...
19-19.9	...	...	...	...	...	...	...	...	.53	...	$.86	$.81	$.91	$.86	...	.78	...	...
20-20.9	$.70	...	$.60	...	...	...	...	...	.55	...	.88	.83	.93	.88	...	.80	...	...
21-21.9	.72	...	.63	...	...	...	...	...	.57	...	.90	.85	.95	.90	...	.82	...	...
22-22.9	.74	...	.66	...	...	...	...	...	.59	$.95	.92	.87	.97	.92	...	.85	...	...
23-23.9	.76	...	.69	...	...	$.78	...	...	.61	.97	.94	.89	.99	.94	...	.88	...	...
24-24.9	.78	...	.72	$.71	$.73	.80	...	...	.63	.99	.96	.91	1.01	.96	$.90	.91	...	...
Below 25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	$.83	...
25-25.9	.80	$.58	.75	.73	.75	.82	...	...	.65	1.01	.98	.93	1.03	.98	.90	.94	.85	...
26-26.9	.82	.63	.78	.75	.77	.84	...	...	.67	1.03	1.00	.95	1.05	1.00	.90	.97	.87	...
27-27.9	.84	.68	.81	.77	.79	.86	...	...	.69	1.05	1.02	.97	1.07	1.02	.90	.99	.89	...
28-28.9	.86	.73	.84	.79	.81	.88	$.72	$.67	.71	1.07	1.04	.99	1.09	1.04	.90	1.01	.91	$.61
29-29.9	.88	.78	.87	.81	.83	.90	.74	.69	.73	1.09	1.06	1.01	1.11	1.06	.90	1.03	.93	.63
Below 30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30-30.9	.90	.82	.90	.83	.85	.92	.76	.71	.75	1.11	1.08	1.03	1.13	1.08	.90	1.05	.95	.65
31-31.9	.92	.86	.92	.85	.87	.94	.78	.73	.77	1.13	1.10	1.05	1.15	1.10	.92	1.07	.97	.67
32-32.9	.94	.90	.94	.87	.89	.96	.80	.75	.79	1.15	1.12	1.07	1.17	1.12	.94	1.09	.99	.69
33-33.9	.96	.96	.96	.89	.91	.98	.82	.77	.81	1.17	1.14	1.09	1.19	1.14	.96	1.11	1.01	.71
34-34.9	.98	.98	.98	.91	.93	1.00	.84	.79	.83	1.19	1.16	1.11	1.21	1.16	.98	1.13	1.03	.73
Below 35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35-35.9	1.00	1.00	1.00	.93	.95	1.02	.86	.81	.85	1.21	1.18	1.13	1.23	1.18	1.00	....	1.05	.75
36-36.9	1.02	1.02	1.02	.95	.97	1.04	.88	.83	.87	1.23	1.20	1.15	1.25	1.20	1.02	....	1.07	.77
37-37.9	1.04	1.04	1.04	.97	.99	1.06	.90	.85	.89	1.25	1.22	1.17	1.27	1.22	1.04	....	1.09	.79
38-38.9	1.06	1.06	1.06	.99	1.01	1.08	.92	.87	.91	1.27	1.24	1.19	1.29	1.24	1.06	....	1.11	.81
39-39.9	1.08	1.08	1.08	1.01	1.03	1.10	.94	.89	.93	1.29	1.26	1.21	1.31	1.26	1.08	....	1.13	.83
40 and over	1.10	1.10	1.10	1.03	1.05	1.12	.96	.91	.95	1.31	1.28	1.23	1.33	1.28	1.10	....	1.15	.85

Column 1—Effective October 17, 1938, by Standard Oil Co. of Indiana. By Gulf Refining Co., October 13, 1938. Carter Oil Co. schedule and prices same from 30° upward, but on lower gravities pays below 21° 60 cents, with 3 cents added for each degree up to and including 29-29.9°, effective October 13, 1938. Gulf Oil Corp. starts at below 25° 78 cents, October 13, 1938. Texas Co. schedule starts at 28-28.9° at 86 cents. Pure Oil Co. same as Standard of Indiana's schedule, effective October 14, 1938.

Column 2—Sinclair Prairie Oil Marketing Co. February 16, 1939.

Column 3—Magnolia Petroleum Co. effective October 12, 1938; Shell Petroleum Corp., October 22, 1938; Shell Oil Co., Inc., April 1, 1939.

Column 4—Effective December 3, 1938, by Humble Oil & Refining Co. in Central Texas. By Magnolia Petroleum Co. in East Central and in North and Central Texas, excepting that it starts at below 29° at 79 cents, effective December 3, 1938. Texas Co. in North and Central Texas, same as Magnolia's but effective October 12, 1938. Gulf Refining Co. same as Magnolia's, effective October 13, 1938. Sinclair Prairie Oil Marketing Co. same as Magnolia's, effective October 5, 1939. Stanolind Oil Purchasing Co., in Cooke and Montague counties, schedule starts at below 21°, 60 cents, with a 2-cent spread upward to 40° and over at $1, effective October 17, 1938.

Column 5—Standard Oil Co. of Louisiana, effective October 5, 1938. Met by Gulf Refining Co. October 13; met by Texas Co. October 12.

Column 6—Humble Oil & Refining Co., October 11, 1938.

Column 7—Humble Oil & Refining Co., Effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude," beginning with 34-34.9°, at 84 cents, with 2-cent spread to 40° and over at 96 cents, and "Panhandle sour crude," 70 cents for 34-34.9°, with a top of 91 cents for 40° and over, effective October 12. Magnolia Petroleum Co. met Humble prices throughout, effective December 3. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents with a 2-cent spread, and a top price of 96 cents for 40° and above, and "Panhandle sour crude" below 29°, 67 cents, with a top of 91 cents for 40° and above effective October 13. Phillips Petroleum Co. schedule for sweet crude in Gray, Carson, and Hutchinson counties, starts at below 29°, 72 cents, with a spread of 2 cents up to 96 cents for 40° and over, effective February 7, 1939.

Column 8—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude" at 34-34.9°, 84 cents, with a top of 96 cents for 40 gravity, and "Panhandle sour crude" at 34-34.9°, 79 cents, with a top of 91 cents for 40° and over, effective October 12. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents, with a top of 96 cents for 40° and over and "Panhandle sour crude" at below 29°, 67 cents, with a top of 91 cents for 40° and above, effective October 13. Phillips Petroleum Co. schedule for sour crude in Carson, Moore, and Hutchinson counties, starts at below 29° at 67 cents, with a spread of 2 cents up to 91 cents for 40° and over, effective February 7, 1939.

Column 9—Humble Oil & Refining Co., effective October 11, 1938. Texas Co. schedule starts at below 26° at 65 cents, and ends at 36° and over at 87 cents, effective October 12. Gulf Refining Co. starts at below 26° at 65 cents and ends at 40° and over at 95 cents, effective October 13. Magnolia Petroleum Co. schedule starts below 25°, 63 cents, and ends at 40° and above at 95 cents, effective October 12. Sinclair Prairie Oil Marketing Co. schedule same as that of Magnolia, effective October 11, but revised on March 24, 1939, to stop at 36° and over at 87 cents. Stanolind Oil Purchasing Co. schedule same as that of Humble, effective October 11. Stanolind Oil & Gas Co. (Winkler County) starts at below 26°, 65 cents, with a 2-cent spread, and a top of 95 cents for 40° and above, effective October 11, 1938. Effective September 1, 1939, Shell Oil Co., Inc., posted Yoakum County crude, starting at below 20°, 53 cents, with 2 cents added for each degree up to 36° and over at 87 cents.

Column 10—Humble Oil & Refining Co., effective October 11, 1938. Magnolia Petroleum Co., in Tomball, effective October 12.

Column 11—Effective October 2, 1939, by Humble Oil & Refining Co. in Texas Coast. By Sinclair Prairie Oil Marketing Co. in Texas Coast, October 3, 1939. By Texas Co. at $1.16 in Texas and Louisiana Coast, October 2, 1939, schedule stopping at 34° and over. By Sun Oil Co. in Texas and Louisiana Coast, October 2, 1939. By Gulf Refining Co. in Texas and Louisiana October 2, 1939, excepting that Louisiana schedule stops at $1.16 for 34° and above.

Column 12—Effective by Humble Oil & Refining Co. October 2, 1939. By Sun Oil Co. in Anahuac, October 2, 1939. By Gulf Refining Co. in Anahuac, October 2, 1939.

Column 13—Effective October 2, 1939, by Humble Oil Refining Co. By Texas Co. up to 28° and over at $1.09 October 2, 1939. Continental Oil Co. October 2, 1939.

Column 14—Effective October 2 by Humble Oil & Refining Co. By Sun Oil Co. in Mirando alone, stopping at 24-24.9° at 96 cents. By Stanolind Oil & Gas Co. in West Beaumont, alone, October 2, 1939. Gulf Refining Co. in West Beaumont, October 2, 1939. By Magnolia Petroleum Co. in Beaumont, October 2, 1939. By Texas Co. in Duval and Mirando, stopping at 28-28.9° at $1.09. Continental Oil Co. in Mirando and Duval, October 2, 1939.

Column 15—Effective October 2, 1939, by Texas Co.

Column 16—Magnolia Petroleum Co., effective October 12, 1938.

Column 17—Standard Oil Co. of Louisiana, effective October 23, 1939.

Column 18—Continental Oil Co., effective October 11, 1938.

Standard Oil Co. of Louisiana, below 25° 83 cents, 2 cents added for each degree up to 40° and over at $1.15.

Middle Western States

OHIO OIL CO.
(Effective June 8, 1939)

Illinois old fields	$0.95
Illinois basin	1.05
Princeton, Ind.	.95
Western Kentucky (June 9, 1939)†	.90
Birk City, Ky. (June 9, 1939)¶	.90
Corydon, Ky. (June 9, 1939)¶	.90
Greendale, Porter, Crystal and Wise, Mich. (Oct. 9, 1939)*‡	$1.02
Buckeye, Bentley, Edenville, Beaverton, Mich. (Oct. 9, 1939)*	1.00
Freeman-Redding, Mich. (Oct. 9, 1939)‡	.97
West Branch and Arenac, Mich. (Oct. 9, 1939)*	.82
Allegan-Kent (Oct. 10, 1939)	1.03
Van Buren (Oct. 10, 1939)	.98
Muskegon	1.00
Sherman and Freeman, Mich. (Oct. 9, 1939)‡	.97
Eastern Kentucky:	
Big Sandy River (June 9, 1939)†	$1.02
Kentucky River (June 9, 1939)†	1.10

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co.. §Imperial Refining Co. ¶Sohio Oil Co. Bloomingdale posted by Tri-Lakes Corp. Kent County by Naph-Sol Refining Co. Effective Sept. 13, 1939, Sohio Corp. posted 95 cents per barrel in Salem, Ill., pool, and on Oct. 10, 1939, posted 95 cents per barrel in the Griffin field in Gibson County, Indiana, and Wabash County, Illinois, for crude produced from sand and 90 cents for crude produced from limestone.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)*	$0.92
Elk Basin, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, light, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, heavy (Oct. 11, 1938)†	.40
Lance Creek, Wyo. (Oct. 11, 1938)*	.77
Rock Creek, Wyo. (Oct. 11, 1938)*	1.00
Iles, light, Colo. (Oct. 11, 1938)†	.98
Iles, heavy, Colo. (Oct. 11, 1938)†	.92
Dutton Creek, Wyo. (Oct. 11, 1938)†	See note below
Frannie, light, Wyo. (Oct. 11, 1938)†	$0.55
Frannie, heavy, Wyo. (Oct. 11, 1938)†	.42
Hamilton dome, Wyo. (Oct. 11, 1938)†	.35
Midway, Wyo. (Oct. 11, 1938)†	See note below
Salt Creek Tensleep Crude, Wyo. (Oct. 11, 1938)†	$0.646
Salt Creek (Oct. 11, 1938)	See note below
Canon City, Colo. (Oct. 11, 1938)‡	$0.90
Florence, Colo. (Oct. 11, 1938)‡	.90
Cat Creek, Mont. (Oct. 11, 1938)‡	1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡	.98
Lance Creek, Wyo. (Oct. 11, 1938)‡	.77
Lea County, New Mexico	See West Texas gravity schedule‡
Artesia, Jackson and Maljamar	See gravity table‡
Fort Collins and Wellington, Colo.	See note below
Eddy County, New Mexico (Oct. 11, 1938)§	$0.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. §Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crudes start at below 29°, 86 cents, 2 cents spread up to 40° and over at $1.10. Salt Creek crude, excepting Tensleep, takes Standard Oil Co. of Indiana's Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective Oct. 11, discontinued posting prices in Greybull-Torchlight, Wyoming, and Hogback and Hospah, New Mexico, in Fort Collins and Wellington, Colorado, effective Oct. 11, 1938, by Continental Oil Co. 28-28.9°, 81 cents, with 2 cents added for each degree up to 40° and over at $1.05.

Eastern States

SOUTH PENN OIL CO.
(Effective Nov. 1, 1939)

Pennsylvania Grade oil in National Transit lines (Bradford field)	$2.40
Pennsylvania Grade Oil in Southwest Pennsylvania lines	2.05
Pennsylvania Grade oil in Eureka Pipe Line lines	1.99
Corning grade oil in Buckeye Pipe Line Co. line (Jan. 24)	1.02

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective Nov. 1, 1939)

Bradford, Pa.	$2.40
Allegany, N. Y.	2.40

PENNZOIL CO.
(Effective Nov. 1, 1939)

Group A	$2.35
Group B	2.34
Group C	2.33
Group D	2.32
Group E	2.30

PURE OIL CO.
(Effective Nov. 1, 1939)

West Virginia	$1.99

Canada

ONTARIO
(Oct. 25, 1938, by Imperial Oil, Ltd.)

Petrolia	$1.90
Oil Springs	$1.97

TURNER VALLEY
(Jan. 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65° and higher	$2.14
Discolored naphtha and crude oil, 40°-40.9°	1.14
Increasing 2 cents for each degree gravity with top price for 64°-64.9°	1.62

These prices f.o.b. producers' field tankage.

Tax Reduction Helps

Reports reaching the American Petroleum Institute from 50 representative cities indicate that the retail price of gasoline averaged 13.52 cents per gallon on October 1 as compared with 13.38 cents on September 1 and 13.76 cents on October 1, 1938. Taxes averaging 5.42 cents per gallon increased the total retail cost to the consumer to an average of 18.94 cents per gallon as against 18.84 cents on September 1 and 19.20 cents on October 1, 1938.

Elimination of the New Orleans, La., city gasoline tax of 2 cents per gallon brought about the first reduction in tax costs in years. The levy was found largely to be ineffectual as a producer of revenue and merchants complained that it was driving trade from the city. Added to the 1-cent federal and 7-cent state gasoline taxes, the city toll forced consumers to pay taxes of 10 cents per gallon, with the effect nearly of doubling their motor-fuel costs.

Taxes now paid annually by motorists in the United States exceed the total taxes paid each year by everybody in the whole country in the horse-and-buggy days.

This year automotive taxes will total about $1,600,000,000, or one-quarter of a billion dollars more than the annual total tax collections in the United States four decades ago, reports the American Petroleum Industries Committee. Forty per cent of the total tax revenue of the 48 states is provided by motorists. In addition they pay approximately one-third of a billion dollars in automotive taxes to the federal Government.

Rocky Mountain Runs

Production estimates for week ended October 28:

WYOMING

	Bbl.
Salt Creek	13,140
Big Muddy	1,190
Byron	4,300
Dallas Derby	570
Elk Basin	650
Frannie	1,540
Garland	2,560
Grass Creek	1,690
Hudson	240
LaBarge	1,000
Lance Creek	21,600
Lost Soldier	1,810
Mahoney	260
Medicine Bow	1,550
Mule Creek	200
Oregon Basin	2,880
Osage	800
Quealy dome	530
Rock River	2,640
Wertz	3,780
Miscellaneous	600
Total Wyoming	63,530

MONTANA

Border	80
Cat Creek	570
Cut Bank	10,080
Dry Creek	1,010
Kevin-Sunburst	4,550
Pondera	970
Total Montana	17,200

COLORADO

Florence	100
Fort Collins and Wellington	370
Wilson Creek	390
Iles dome	1,860
Moffat	320
Rangely	100
Tow Creek	130
Price	570
Total Colorado	3,900

NEW MEXICO

Cooper	4,160
Eaves	870
West Eunice	140
Eunice	21,920
Hardy	3,730
Hobbs	12,310
Jal	560
Langlie	5,420
Lynch	490
Lynn	970
Mattix	5,390
Monument	23,050
North Lynch	30
Penrose	5,310
Rhoades	130
Skaggs	110
Skelly	1,790
South Eunice	4,160
South Lovington	1,010
Vacuum	11,230
Loco Hills	130
Artesia-Maljamar	11,020
Getty	100
Hogback	200
Rattlesnake	570
Table Mesa	90
Total New Mexico	114,890
Total Rocky Mountain region	199,580

Gulf Coast Markets

(Continued from Page 101)

viously quoted prices. It is known, however, that very little material is available as a result of substantial buying during recent weeks.

There was little evidence of any easing up in the tight diesel-oil and fuel-oil markets. Most sellers still are behind in their orders, and with colder weather on the scene they are expecting increased demand. Ship bunkering at Gulf Coast ports picked up during the week, several bunkering companies reporting difficulty in keeping up with ships coming in.

Kerosene was slightly easier to obtain if buyers were willing to pay the asking price.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1938

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Ellwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Santa Paula*	Kettleman Hills	Wheeler Ridge	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.88	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents, 24-24.9, 99 cents; 25-25.9, $1.03 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

Montebello—Effective August 11 Standard Oil Co. of California increased prices in the Montebello field ranging from 1 cent per barrel for 26-26.9 gravity to 8 cents for 40 gravity, in addition to which the price schedule has been extended to provide new prices for gravities of 41 degrees and above. The new schedule ranges from 77 cents per barrel for 14-14.9 degrees to $1.75 for 46 gravity and above.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1939 High	1939 Low	Week ended Oct. 28 High	Week ended Oct. 28 Low	Week ended Oct. 28 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1938 High	1938 Low	1937 High	1937 Low
74½	50	68	67⅛	67⅛	Amerada Corp.	788,675	N.P.	50cQ	10-31-39	$2.00	$2.07	$3.04	78	55	111⅞	51⅛
24⅞	18⅛	24¾	24⅛	24⅝	Atlantic Refining	2,663,999	$25	25cQ	9-15-39	1.00	1.40	3.51	27⅝	17¾	37	18
21½	10¼	18⅝	16⅝	17⅞	Barber Asphalt Co.	390,223	$10	75c	12-16-37	....	—.85	1.91	23¾	12⅛	43⅜	10⅛
19¼	11⅛	15	14	15	Barnsdall Oil Co.	2,250,344	$5	15c	12-9-39	1.00	1.26	.85	21⅜	10⅛	35¼	10
9⅞	6½	8¾	8⅜	8⅜	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	11-15-39	.80	.55	1.48	10⅝	7	17⅞	7
31½	19⅞	28⅞	27⅛	27⅝	Continental Oil of Delaware	4,682,581	$5	25cQ	9-28-39	‖1.00	1.10	2.98	35¾	21¼	49	24
9⅝	4½	7⅞	7⅝	7⅝	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	.83	.94	9¾	5	17⅝	4¾
20¼	10	15⅞	15	15¼	Lion Oil Refining	435,815	N.P.	25cQ	10-10-39	1.00	2.09	2.17	25⅛	15⅝	34	12½
18	11⅛	17⅛	16½	17	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-39	.60	.56	2.86	22⅝	12¼	35⅜	14
14⅞	8¾	12⅛	11½	11½	Mission Corporation	1,379,245	$10	25c	6-29-39	1.00	1.04	1.31	17¾	10⅝	34	15
15½	5⅝	12	11½	11½	National Supply	1,155,517	$10	$2 pf.‡	12-22-37	....	—.79	4.90	23	12½	41⅜	17⅝
10½	6	8¾	8¼	8¼	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	.20	.25	1.30	14⅞	8⅞	22⅞	8
11⅞	7⅜	9	9	9	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	.50	1.22	1.39	15⅞	10¼	29¾	11¾
8¾	5	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	....	.08	1.18	9¼	6¼	17⅛	7
46½	31¼	46	43	43½	Phillips Petroleum	4,449,052	N.P.	50cQ	9-1-39	‖2.00	2.03	5.42	44⅝	27¼	64	30½
24	17⅛	22⅞	21¾	22⅞	Plymouth Oil Co.	1,006,200	$5	35cQ	9-30-39	1.40	2.59	2.85	25⅝	15	29⅞	13
11¾	6⅛	9⅝	9¼	9¼	Pure Oil Co.	3,982,031	N.P.	25c	12-1-37	....	.38	2.15	13½	8¼	24⅜	8⅜
10¼	6⅝	8½	8⅛	8¼	Richfield Oil Corp.	4,010,000	N.P.	50c	12-21-38	.50	.51	.35	9⅞	5	6½	4½
24⅜	15½	22⅞	21½	21½	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-15-39	1.00	1.52	1.97	27½	15½	54⅛	16
17¼	9⅞	15¼	13⅞	14⅞	Shell Union Oil	13,070,625	N.P.	25c	7-20-39	.70	.72	1.44	18⅝	10	34⅜	14⅞
29½	15½	22⅞	22¼	22¾	Skelly Oil	995,349	$15	50c	11-15-39	1.00	2.27	6.07	34⅜	18½	60⅝	26½
15⅛	10¼	14	13⅝	14	Socony-Vacuum	31,206,071	$15	25cSA	9-15-39	.50	1.29	1.82	16⅝	10⅜	23¼	13
33⅝	24¼	29⅜	27⅝	28⅜	Standard Oil of California	13,004,153	N.P.	25cQ	9-15-39	1.40	2.22	3.17	34⅞	25⅛	50	27⅛
30	22¾	27⅛	26⅝	27	Standard Oil (Indiana)	15,272,020	$25	25cQ	9-15-39	1.00	1.82	3.66	35½	24¾	50	26½
53½	38	48⅞	47⅛	47¼	Standard Oil of New Jersey	26,618,065	$25	50c¶	6-15-39	§1.50	2.86	5.64	58⅜	39¾	76	42
66	45¾	60¼	58	58¾	Sun Oil	2,316,484	N.P.	25cQ	12-15-39	1.00	1.07	3.86	65½	45	77½	44½
3⅝	1¾	2⅞	2¾	2⅞	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	.10	.24	.32	4¼	1¾	7¾	1½
50¾	32½	48⅛	47	47¼	Texas Corp.	10,876,882	$25	50cQ	10-2-39	2.00	2.13	5.02	49⅝	32⅝	65⅛	34⅜
5¾	3¼	4¾	4½	4½	Texas Gulf Producing Co.	888,144	N.P.	10c	6-15-39	.15	.86	.68	5⅞	2⅝	9⅝	2
11⅜	7	9⅝	9½	9½	Texas Pacific Coal & Oil	888,236	$10	10c	9-1-39	.40	1.16	1.11	12½	7	16⅝	5⅜
14¼	9½	12⅝	12	12⅜	Tide Water Associated	6,375,253	$10	15c	9-1-39	1.00	1.28	2.08	15⅜	10⅛	21⅝	13⅛
19¾	15⅛	17⅞	17¼	17¼	Union Oil of California	4,666,270	$25	25c	8-10-39	1.20	1.47	2.58	22½	17⅛	28⅛	17½
24¼	20⅛	23¾	23¼	23¼	Union Tank Car Co.	1,177,381	N.P.	30cQ	9-1-39	1.30	1.16	1.70	23½	20	31½	22
3⅞	2⅜	3¾	3⅛	3¾	Wilcox Oil & Gas	487,568	$5	....	5-10-28	....	.52	.24	3½	1⅝	6¼	1¾

*Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend. ‖Also right to subscribe to bonds. ¶Also 1 per cent in stock. —Deficit.

New York Curb Exchange

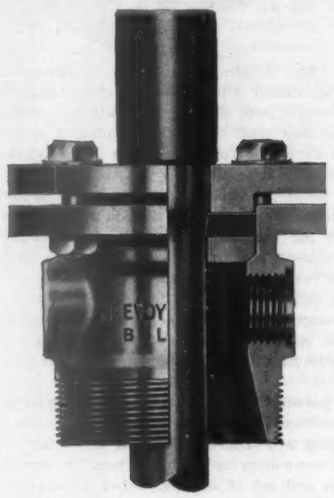
1939 High	1939 Low	Week ended Oct. 28 High	Week ended Oct. 28 Low	Week ended Oct. 28 Close	Stocks—	Total shares Outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1938 High	1938 Low	1937 High	1937 Low
11¾	5½	8⅛	7½	7⅝	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.10	—$0.22	$0.27	11⅝	5	10	6⅝
7¼	2½	3⅞	3½	3⅞	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	10¼	4⅞	21⅝	7
34¾	26½	29	28½	28½	Buckeye Pipe Line Co.	200,000	$50	50c	9-15-39	2.00	2.36	4.02	39	22½	51½	36
130	110	119	117½	119	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-25-39	6.50	5.32	6.73	128	97	112	95½
9¼	4½	6	5¾	5¾	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	11	5⅛	5⅝	1½
2¼	½	1⅞	1¾	1¾	Cosden Petroleum	462,551	$1	....	. ....	....	....	.19	2⅝	⅞	5½	1½
28	16¾	26¾	25½	25½	Creole Petroleum	6,975,383	$5	50cSA†	6-15-39	1.00	1.64	1.61	27½	17½	38¾	20¼
7⅛	3⅝	5⅛	5⅛	5⅛	Darby Petroleum	351,390	$5	25cSA	1-15-39	.50	....	1.36	10¼	5½	18⅝	6½
2⅝	1½	2⅜	2¼	2⅜	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.91	1.34	3½	1½	8⅜	2¼
21½	15⅛	21½	20½	21½	Eureka Pipe Line	50,000	$50	50c	11-1-39	3.00	—.37	—.12	31	16	47½	24½
45⅛	29¼	45⅛	43	44	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-39	1.00	1.43	3.51	46⅞	33	63½	33
71	52½	69	68	68¼	Humble Oil & Refining	8,987,840	N.P.	62½c	10-2-39	3.00	3.98	5.22	72⅝	56	87	54⅞
17	11⅜	15	13½	14⅞	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-39	1.25	.96	.98	19½	14⅛	24¼	14½
7	5⅝	6¼	6	6⅛	Indiana Pipe Line	300,000	$10	30c	5-15-39	.50	.47	1.03	9⅜	6	15	5⅞
27½	17½	22⅜	21½	22¼	International Petroleum	14,324,088	N.P.	1.00†‡	6-1-39	2.50	1.98	....	31¼	21	39½	23½
3¾	2⅛	2⅝	2¼	2⅝	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	.10	.14	.17	5	2⅛	8¾	2⅝
9½	7⅛	9½	8½	9½	Lone Star Gas	5,553,747	N.P.	20c	8-21-39	.60	.88	1.14	10⅜	6⅝	14¼	5¼
7¾	4	5⅞	5¼	5½	Louisiana Land & Exp.	2,977,449	$1	10cQ	9-15-39	.45	.45	.58	9⅜	6½	15¼	6⅜
17	14½	..	..	..	Margay Oil Corp.	149,943	N.P.	25cQ	10-10-39	1.00	2.28	3.26	24	16	33½	17
8¾	6⅝	7¾	7⅝	7¾	Midwest Oil Co.	998,474	$10	45c	6-15-39	1.00	.93	1.14	9¾	6⅝	14⅝	6¼
5⅞	4⅞	5¾	5½	5⅝	Mountain Producers	1,593,584	$10	30cSA	6-15-39	.60	.62	.76	5⅝	4½	7⅞	4⅛
14	11¼	13⅜	12⅝	12⅝	National Fuel Gas	3,810,183	N.P.	25cQ	10-16-39	1.00	.84	.96	14⅝	11½	19½	12
9	7¼	9	8⅞	9	National Transit	509,000	$12.50	35c	6-15-39	.75	.88	1.19	9¼	6½	12½	7¼
1¾	1½	1½	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	2⅝	1½	5	1⅛
4⅞	4	4⅝	4⅝	4⅝	New York Transit	100,000	$5	25c	10-14-39	.25	.16	.49	4½	3½	5⅝	3⅞
6	4¼	..	..	..	Northern Pipe Line	120,000	$10	15c	12-1-39	.35	.24	.78	6	4	12⅜	5⅝
7⅝	4	5⅝	5⅛	5⅝	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7⅜	3½	9⅝	2⅜
4⅜	1¼	4⅜	3⅞	4⅛	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	4½	1⅝	12⅜	2
3	1⅞	..	..	..	Ryan Consolidated	298,931	N.P.	....	.....	....	.29	.46	4	2⅛	6½	2¼
4⅞	3½	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-39	.30	—.27	.85	5⅜	3¼	7¼	3⅞
39½	26⅜	37	36½	36½	South Penn Oil	1,000,000	$25	37½cQ	9-29-39	1.75	1.44	4.64	39	28¾	56	35
23	18	23	23	23	Southwest Penna. Pipe Lines	35,000	$50	50cQ	10-2-39	2.00	—.41	.95	22¼	16½	42	20
18⅞	17¼	18⅞	18⅝	18⅞	Standard Oil of Kentucky	2,604,790	$10	25c	9-15-39	1.25	1.45	1.60	18¾	15	21⅛	14¾
26¾	17	25½	25½	25½	Standard Oil of Ohio	753,740	$25	25c	9-15-39	1.00	1.81	3.67	22⅜	16¼	45	16
2¾	1⅜	2¾	2⅛	2⅜	Sunray Oil	2,007,076	$1	5c	4-27-39	.05	.23	.42	3¼	2	4⅞	2
4	2⅝	3	2⅞	2⅞	Texon Oil & Land	936,024	$2	10c	6-30-39	.60	.56	.51	5¼	3½	7⅝	2
6	2½	3⅝	3½	3½	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	7⅝	4¼	13⅞	4⅝
3⅜	1⅝	2⅞	2½	2⅝	United Gas Corp.	7,818,959	$1	....	.....	....	—.51	.25	5¼	2⅝	13⅞	3

†Includes extras. ‡Payable in Canadian funds. —Deficit.

New or Improved Equipment

McEvoy Tubing Head Is Boxed for Protection in Handling

McEvoy Co. has announced its Type BHL tubing head for low-pressure and pumping wells, introducing the idea of packaging to the well-head field. Packaging

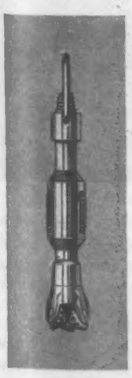


is said to protect the product in shipment, facilitate handling, and simplify storage in warehouses. The new head features collar suspension of tubing for ease of assembly and self-adjusting Neoprene packing for positive seal-off.

The packing consists of a thick Neoprene ring, sandwiched between upper and lower gland rings. The tubing weight bears directly on the upper gland ring and compresses the Neoprene to seal around the tubing and packing assembly. Packing may be tightened manually simply by taking up on flange hold-down bolts. Neoprene packing will act as a shock absorber if the tubing should be subjected to unusual shock. The upper gland ring is split for ease of assembly.

Miniature Drilling Tool Forms Attractive Bit of Jewelry

An attractive miniature rock bit and reamer is being manufactured by J. B. Walker, an experienced oil man who, 25 years ago, with Onondaga Oil Co. at Goose Creek, had the distinction of being the youngest production superintendent in Texas. This piece of jewelry is a reproduction of a rotary-drilling tool. It is assembled from eight finely matched small parts, and its three cones and two side-reaming rollers actually rotate.



The Master Oil Well Drillers emblem, shown in actual size in the illustration, is made in either silver or 24-carat-gold finish or may be had in solid gold or platinum on special order. An illustrated circular is sent upon request to J. B. Walker Co., 430 South Union Avenue, Los Angeles, Calif.

Allis-Chalmers Extends Line of Demountable-Rim Sheaves

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., has extended its line of Texrope demountable-rim type sheaves to certain sizes carried in stock and a range of sizes which can be made promptly to order. These cast-iron sheaves consist of a substantial bushing, on which may be mounted a sheave rim of desired number of grooves and pitch diameter.

This demountable-rim type of sheave was originally introduced primarily for use on oil-field equipment. However, since this type provides an easy method for changing sheaves without removing the hub from the shaft, it can be used to advantage for any application requiring a limited number of fixed steps in speed change. These sheaves are available for use with C and D section belts.

Increased Safety Is Offered by Durakool Mercury Switch

Mechanical and electrical maintenance engineers dealing with hazardous, explosive contact conditions are evincing interest in the Durakool metal mercury switch. Durakool, Inc., Elkhart, Ind., describes it as a silent, unbreakable, noninflammable mercury switch and says that its new double reduction (two reducing agents) prevents deterioration of the mercury, eliminates possibility of contact interruptions, and increases efficiency and reliability in operation.

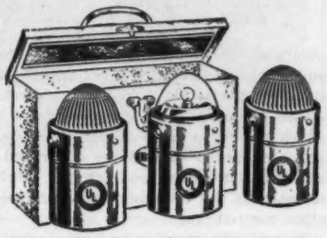
Durakools, available in capacities up to 200 ampere (larger on special order), operate on small tilt and allow many new applications, from wall switches to motor starters. Due to the steel-shell enclosure, the company says they appear to offer safety in any explosive atmosphere, and with a rubber covering may even be used under water or other liquid. They carry a 3-year guarantee.

Kappele Represents Inferno

Inferno Co., Shreveport, La., has appointed M. T. Kappele as its new representative in Kansas and Oklahoma. Mr. Kappele has been in the oil-well supply business for many years, and he has a wide acquaintanceship throughout the country. Besides representing Inferno, he handles lines of several other companies.

Weatherproof Electric Flare Is Handy Device in Oil Industry

Ecolite electric flares, manufactured by Economy Electric Lantern Co., Inc., 3100 West Cherry Street, Milwaukee, Wis., comply with the I.C.C. regulations, and also are approved by Underwriter's Laboratories for use as warning or danger signals. Specifications of the S.A.E. and the Bureau of Standards are followed.



Construction details include an all-steel body cover, made of 24-gage material and finished in bright-red enamel. The flares are equipped with a heavy ruby-red lens, and brass contacts are used throughout. The weatherproof switch is of the rotary type, with positive on-and-off positions. The lamp is a Mazda No. 502, with a rated life of 75 hours, and the battery is a standard 6-volt lantern battery, good for 60 to 80 hours of use.

The flare is weatherproof, vibrationproof and dustproof. Visibility is 1 mile under normal conditions. A highly polished nickel reflector concentrates the light rays in the lens, giving off a strong red light. A compact steel box is furnished, to hold three flares securely and safely.

Caterpillar Adds New Model to Line of Diesel Electric Sets

To answer a demand for an economical power plant of 30-kw. capacity, Caterpillar Tractor Co., Peoria, Ill., has added Model 46-30 to its line of diesel electric sets. The new 30 kw. set includes six-cylinder diesel engine, and, as in the 15 and 20-kw. sizes, has all electrical equipment inbuilt, with the exception of a circuit breaker. Less than an hour is required to install the set and have it providing light and power.

Uses for the set are widely varied. No rheostats, switchboards, or other instruments are needed.

SECURITY'S BAKERSFIELD BRANCH PUT INTO OPERATION

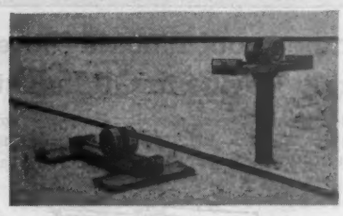
This is the new Bakersfield, Calif., branch office and warehouse of Security Engineering Co., Inc., recently put into operation. The building, designed and erected by Austin Co., includes a suite of offices, a warehouse, and a shop.

A complete stock of Securaloy drillable liners and well-production accessories, as well as Sievers reamers, reamer cutters, parts, etc., is carried in the warehouse, and sufficient shop machinery has been installed to take care of the necessary field work.

Jud Williamson and Casey Jones, who have been handling the sales and service of Security products in the San Joaquin Valley, will operate out of the new branch, assisted by Scott Neuls, transferred from Whittier to Bakersfield to act as warehouse man. Karl Clark will continue to cover the Coalinga and Kettleman Hills fields out of Coalinga, Calif. From the Bakersfield branch, 24-hour, 7-days-a-week Security service will be available to the producing fields in the San Joaquin Valley.

Inequalities of Surface Met by Trakrol Rod-Line Carriers

Trakrol rod-line carriers, manufactured by Sisk Co., 202 North Burnett Street, Wichita Falls, Tex., are a new development designed to provide economy in



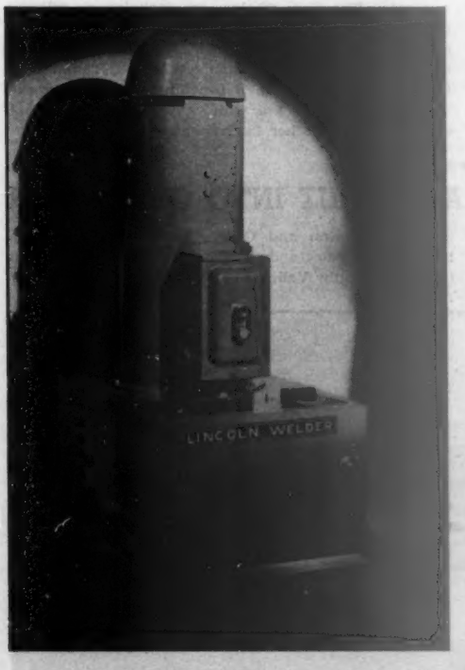
pumping operations. They operate without lubrication and servicing. Operation is not affected by rain or sand since no lubrication is used. The carriers may be installed on stakes of different height or on the ground, which allows them to adjust differences in elevation and is of special value under downward bends or over hill tops, on stakes too high for lubricating and inserted into the ends of 6-in. or larger road-crossing pipes for rod lines.

Trakrol, the manufacturer says, operates with negligible friction drag; reduces chatter, flopping, or breakage of rod lines, and smooths out the well stroke, which increases the life of equipment and decreases the engine and eccentric load down to as little as 25 per cent of the original load under some conditions. It is of oil-treated hardwood construction and is furnished in several sizes for different rod diameters and strokes.

These rod-line carriers are mounted on pipe stakes by driving the bracket furnished into the stake then bolting the track to the bracket. They are mounted on the ground by nailing to slats at each end as illustrated.

Lincoln 200-Ampere Welder Is Suited for Wide Application

A 200-amp. arc welder of the Lincoln Junior type, with a range for many welding applications ordinarily associated with larger welding equipment, is



announced by Lincoln Electric Co., Cleveland, Ohio. This new machine, because it is of motor-generator d.c. arc type, will weld virtually all metals and alloys and do hard-facing work, according to the manufacturer. Its speed of operation and quality of results are reported to be exceptionally high for work of all sizes, under all operating conditions.

The new welder is single-operator, variable-voltage type and can be used with either bare or shielded arc-type electrodes. It has a current range of 60 to 250 amp. for welding duty.

A special feature, now available for the first time on small arc-welding machines, is Lincoln's patented dual continuous control. This advance permits independent adjustment of voltage and current, giving complete and separate control of arc heat and arc penetration, so essential for best and most economical production of sound welds in the many varied present-day arc-welding applications. The advantages of this feature are readily apparent in shops, garages, plants, etc., using small portable welding equipment. Setting the welder is simplified by the fact that both voltage control and current control are self-indicating.

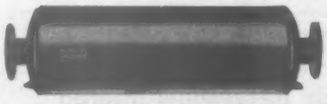
Class B insulation at proper points accounts for the ability of the unit to withstand sustained overloads.

Weight and Torque Calculator

International Derrick & Equipment Co.'s main offices in Columbus, Ohio, is distributing a well weight and torque calculator designed by John A. Tidball, Mid-Continent engineer for its geared pumper department. The device takes the place of books of tables and lengthy mathematical calculations in determining polished-rod loads and the torque and horsepower required to pump a given well. The calculators may be had without cost at the Ideco offices and warehouses, so long as the supply lasts.

Wide Range of Sizes Covered by New Burgess Snubbers

A new line of Burgess snubbers, the SDHC series, is announced by the acoustic division of Burgess Battery Co., 500 West Huron Street, Chicago. It covers a range of standard pipe sizes from 1 to 32 in. Both size and weight have



been reduced. All the performance features of the original Burgess snubber are included in the new series.

Another change lies in the substitution of concentric connections for eccentric connections to facilitate installation. Sizes 1 to 4 in. are provided with nipple connections, while sizes 5 in. and larger are provided with flange connections.

Addition of the smaller and lighter snubbers enables engineers to solve silencing problems on difficult marine and crowded stationary installations.

A.G.A. Gas-Engine Handbook

A handbook destined to prove helpful to all users of gas engines has been published by the American Gas Association, cooperating with the Pacific Coast Gas Association. Most of the contents was written by C. Remschel, of Southern Counties Gas Co. of California. The handbook outlines the many applications of gas engines and presents valuable reference material relative to selection and installation of engines. Horsepower delivery and fuel consumption are given special attention. "Gas-Engine Handbook" is the work of the gas-engine power committee of the Industrial Gas Section of the A.G.A. D. W. Reeves is chairman of the committee, and E. D. Milener heads the Industrial Gas Section.

Here and There With Men Who Manufacture Equipment

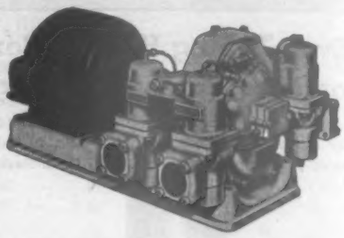
Waukesha Motor Co. has moved its Tulsa headquarters from 313 East Second Street to 703 South Wheeling Avenue. Arch F. Campbell is Tulsa branch manager.

Hewitt Rubber Corp., Buffalo, N. Y., has appointed Arthur Purmort and Nathaniel Ware district representatives. Mr. Purmort will cover the St. Louis, Mo., and Indianapolis, Ind., territories. Mr. Ware is assigned to the Boston office.

C. V. Lally, for several years associated with Pittsburgh Steel Co. as manager of seamless steel tube sales, has resigned.

Smith Precision Pumping Unit Is Designed for Bulk Plants

The Smith 4X remote-control duplex pumping unit, manufactured by Smith Precision Products Co., South Pasadena, Calif., is designed specially for bulk-plant



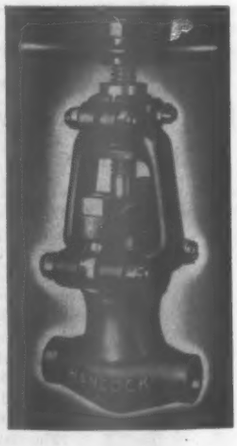
service. The single pump with a direct-connected motor, combined with four integral automatic hydraulic valves, will deliver two different commodities to the loading rack. This is accomplished by the mere reversal of motor rotation, which is controlled from the loading-rack platform by a standard three-button switch. Since the operation of the valves is automatic and clutches are eliminated, the Smith 4X removes the necessity for the loading-rack attendant to make the usual frequent trips to the pump house. In addition to handling two fluids with a single pump, this innovation provides remote control in its simplest form.

The integral hydraulic valves replace the usual hand-operated valves and their direct mounting on the pump eliminates manifolding and unnecessary pipe fitting.

New possibilities in installation arrangements are being developed around the Smith 4X unit; for instead of pumping two different fluids, it is possible to pump a single commodity in two directions, as, for instance, both into and out of storage. Other labor-saving combinations have been found practical.

No Leakage of Valve Through Joint, for There's No Joint

Hancock Valve Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn., announces what is described as a revolutionary type of steel valve, called the Hancock No-Bonnet-Joint valve. This new valve has been developed to end leakage through the gasket joint between the valve body and bonnet at elevated pressures and temperatures. It does this because there is no joint. This feature is of particular interest to the oil, chemical, and other industries handling explosive fluids where the hazard of leakage through a bonnet gasket might be dangerous.



The Hancock No-Bonnet-Joint valves are made for pressures up to 2,500 lb. at 1,000° F. The maker states that this valve weighs less than a fourth as much as a conventional bolted-bonnet valve of the same size and pressure rating. When a No-Bonnett-Joint is welded in the line, the only joint is that of the stuffing box for the stem. The valve may be easily disassembled in the line.

The manufacturer claims that the annoyance of leakage through the threads between the valve-seat ring and the valve body can never occur in this valve, for it has no threads. Its Stellite seat is welded onto the valve body and is an integral part of it. The valve is also heavily Stellited to resist wire-drawing and wear.

No-Bonnet-Joint valves are made in one basic size and then tapped, or bored for welding, for ⅛, ¾, and 1-in. pipe. This simplification, according to the manufacturer, cuts, by two-thirds, repair part and maintenance parts stocks and yet takes care of 90 per cent of the small valve requirements on any high-pressure industrial job.

Brown Acquires Abercrombie Improved Drill-Pipe Cutter

Brown Oil Tools, Inc., Houston, Tex., has purchased the improved Abercrombie outside cutting tools, adding this well-known device to its already large line of cutting and fishing equipment.

The Abercrombie outside cutter represents an important method of recovering stuck drill pipe and cleaning hole quickly and economically. It is designed to make a clean, positive cut, the cutters being fed into the pipe automatically by a screw feed that is propelled by the rotation of the tool. It thereby eliminates overhead strain during the cutting operation. The smooth evenness with which the cutters are fed into the cut prevents possible gouging. Because of the specially designed screw feed for the cutters in this tool, danger of breaking and gouging is not increased in the process of cutting crooked drill pipe, according to the manufacturers' statement.

The tool is credited with cutting and removing as much crooked pipe in a single trip as it is possible to wash over, the degree of efficiency of the tool's operation not being affected by crooked pipe.

For Grounding Oil Storage Tanks

The Type GA Groundem, one of the line of electrical connectors introduced by Burnby Engineering Co., Inc., 459 East 133d Street, New York, is designed for joining the ground lead to loading and unloading pipe of oil storage tanks. This straight-through ground connector is adapted to connect the cable quickly and efficiently to the pipe. The connector can be taken apart and installed over the side of the pipe. Copper-alloy body and Everdur bolts, nuts, and lockwashers provide a strong, corrosion-resistant assembly, the manufacturing company points out. Each size will accommodate a range of pipe and cable sizes.

National Machine Designed for "Slim Hole" Drilling Work

National Supply Co. now offers a new rotary machine known as the FE-12, especially designed for "slim hole" drilling and other portable work. It has a

full 12-in. diameter opening, amply large enough for all bits and pipe commonly used in this type of work. It is rated for drilling to 3,500 ft. with 3½-in. drill pipe.

The FE-12 incorporates many of the features that have made Ideal rotary machines familiar in the oil field. Fully enclosed, it provides a true oil-bath lubrication system for the table bearing and gears. Special attention has been given to preventing the entrance of mud into the reservoirs. The gears have a ratio of 3.05 to 1 and are spiral-cut, assuring increased strength and quiet operation. The main bearing is a proven National design and has 26 balls 1¾ in. in diameter. The pinion shaft has a maximum diameter of 3¾ in. and is mounted on roller bearings. A 16-tooth sprocket with machine-cut teeth is regular equipment.

An outstanding improvement is the new type of rotation lock, wherein the lock pawls engage the table directly to prevent rotation instead of acting through the pinion shaft.

Trade Literature

LOUIS ALLIS CO., Milwaukee, Wis.—Bulletin 611, Louis Allis Ajusto-Spede.

PENNSYLVANIA PUMP & COMPRESSOR CO., Easton, Pa.—Bulletin, aftercoolers.

REED ROLLER BIT CO., P. O. Box 2119, Houston, Tex.—Bulletin 396, Reed nonlubricated plug valve.

QUIGLEY Co., 56 West Forty-fifth Street, New York.—Bulletin, Annite, an all-purpose cleanser.

ALLIS-CHALMERS MANUFACTURING CO., Milwaukee, Wis.—Texrope Topics in new size and dress; large pages and attractive pictures.

McCOLLUM HOIST & MANUFACTURING CO., Downers Grove, Ill.—Bulletin, Universal chain hoists.

GENERAL ELECTRIC CO., Schenectady, N. Y.—Booklet, "Little-Known G-E Products for Industry."

WALTER KIDDE & CO., Bloomfield, N. J.—Booklet on industrial firefighting, "Don't Play With Fire."

LANE-WELLS CO., Los Angeles, Calif.—Current issue Tomorrow's Tools Today.

GWILLIAM CO., 340 Furman Street, Brooklyn, N. Y.—Catalog 16, Gwilliam ball and roller bearings.

B. F. GOODRICH CO., Akron, Ohio.—Catalog, oil hose for cargo handling.

PERMUTIT CO., 330 West Forty-second Street, New York.—Bulletin 2233, Permutit Electro-Chemical Feed.

ALUMINUM LADDER CO., 364 Adams Street, Tarentum, Pa.—24-page catalog, "Aluminum Ladders for Every Requirement."

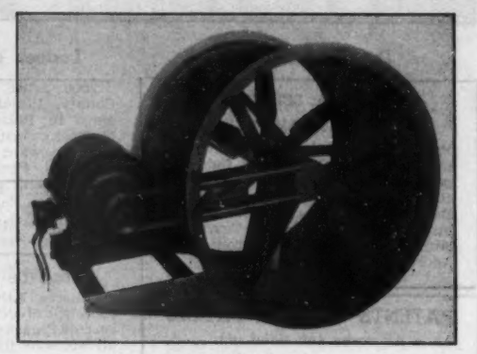
CENTURY ELECTRIC CO., 1806 Pine Street, St. Louis, Mo.—Bulletin, Repulsion-start induction brush-lifting single-phase motors.

ARMSTRONG MACHINE WORKS, Three Rivers, Mich.—Current issue of Armstrong Trap Magazine.

DRESSER MANUFACTURING CO., Bradford, Pa.—Bulletin, Dresser Ready-Pack Sleeves, Stype 80, for making repairs and service connections on gas lines.

South Bend Fan Unit Designed Particularly for Duct Lines

South Bend Air Products, Inc., South Bend, Ind., announces a new fan unit, designed primarily for use in duct systems and claiming a number of advantages,



especially where explosive gases are to be handled.

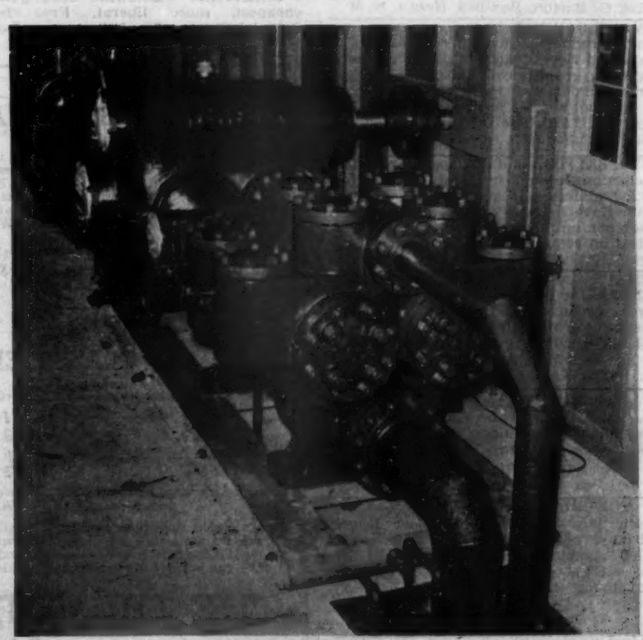
It is furnished in both single-fan and tandem-fan types, for static pressures up to 3 in. Single-fan unit capacities range from 1,600 to 26,000 c.f.m., tandem units from 1,600 to 30,000 c.f.m. These units are easily installed in any duct line without fitting other than for a simple flange on the end of the duct. Blades are drop-forged aluminum alloy, nonsparking, and safe in explosive atmospheres. The motor support is integral with the fan unit. Belt and all working parts are completely enclosed for protection, yet easily accessible. Belt tension is adjustable. When used to handle acids, the unit can be furnished completely covered with Heresite. It is a completely self-contained unit available in practically any size.

Cranz in Large Quarters

J. M. Cranz Co., Hewitt Rubber Corp. distributor in the Buffalo, N. Y., territory since June 1, 1933, is now established in new quarters at 1280 Main Street, Buffalo, two and one-half times the size of its former home. J. M. Cranz is president; Fred Ginther, vice president; and William Herold, office manager and assistant treasurer. Harry Worthington is sales manager. The firm confines its activities to rubber products and covers western New York and northwestern Pennsylvania.

GASO PUMPS INSTALLED IN MODERN PIPE-LINE STATION

Northern Pipe Line Co., of New York, has completed and placed in operation a pump station, at Crown, Pa., on the site of an old pump station which, in its day, was one of the largest in the East. The new plant, classified as a relief station, and provided with the latest equipment, will boost oil from Crown to Kane, Pa.



The pumping equipment consists of three Gaso Fig. 2652 4-7 by 10 fully enclosed duplex pumps, mounted on steel skids and driven by three Model 1742 Buda diesel power units, furnished by Gaso Pump & Burner Co. Each pump is individually driven by shaft extending through a fire wall. These engines develop 225 hp. each, and the pumps as installed have a capacity of 300 bbl. per hour each.

The Fig. 2652 pipe-line pump, the latest addition to the Gaso line, has approximately double the capacity-pressure rating of any other Gaso model. The piston stroke is 12 in. and fluid cylinders are of interchangeable-liner type, providing a range in cylinder-liner sizes of 4 to 7 in. and giving the pump a capacity ranging from 176 bbl. per hour at 1,500 lb. pressure, to 592 bbl. at 500 lb. pressure. Crank and pinion shafts are journaled in roller bearings. The fluid end is of the side-pot type, with all valves individually accessible. The pump is readily adaptable, the manufacturer points out, for any type of drive—gas, gasoline, or diesel engine or electric motor.

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FOR Concordia Parish, La. leases, blocks 320 to 15,000 acres, write C. W. Deming, Registered Dealer, Waycross, Georgia.

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WILL BUY Producing West Texas and New Mexico Royalties. Oscar L. Grimes, Tulsa Loan Building, Tulsa, Oklahoma.

Help Wanted

SALESMAN, familiar with drilling contractors and pumping stations, to represent firm offering a specialized engine reconditioning service. Commission. Address Box 320, The Oil and Gas Journal, Tulsa, Oklahoma.

Survey Service

REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this methods finds it. Faults, broken, treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, Calif.

Mailing Lists

ROYALTY Lists. Oil Investor Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Equipment Wanted

WANTED High Pressure Portable air compressor about 150 cu. ft. capacity good for 1,000 bbl. What have you? P. O. Box 592, Artesia, New Mexico.

WANTED — Complete rigs, engines, pumps, drill pipe, draw works, derricks, tubing, rods, casing, line pipe, tanks. Must be in good condition and reasonable. Furnish complete description and price. Box K-324, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—Portable core drilling rig, complete for 1200-ft. holes. Sutter Well Works, Pass Christian, Miss.

WANTED 18,000 or 20,000 gallon Propane tank. Must pass code requirements. Wire price and location F.o.b. cars. Ben B. Bodne, Charleston, South Carolina.

WANTED truck mounted National, Franks, Failing or similar rotary. Capable 1500 feet 6" hole. Full price, condition tools, available, location, terms, etc. First letter. Address Box K-340, The Oil and Gas Journal, Tulsa, Oklahoma.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, $5 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30
4 Lines	1.40	2.40	3.40	4.40
5 Lines	1.75	3.00	4.25	5.50
6 Lines	2.10	3.60	5.10	6.60
7 Lines	$2.45	$4.20	$5.95	$7.70
8 Lines	2.80	4.80	6.80	8.80
9 Lines	3.15	5.40	7.65	9.90
10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma